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ABSTRACT

In order to appraise the usefulness of instructional television (ITV) as the core component in instructional systems designed to meet the special needs of the educationally disadvantaged children of migrant farm workers, American Indians, and the inner-city poor, a study was made of the use of ITV programs to meet similar needs in other countries. The four in-depth case studies which supported this appraisal are presented here: educational radio and television in Australia, ITV in Israel, the Nippon Hoso Kyokai (NHK) Gakuen (high school) program in Japan, and educational radio in New Zealand. These case studies provide detailed information on the functioning of each program which goes beyond appraising its potential for the educationally disadvantaged in the United States to a complete description of the program and its place in the educational system of the country as a whole. The programs used in Australia, New Zealand, and Japan rely on correspondence courses to supplement the instruction provided on television, while the Israel ITV system is integrated into the school curriculum throughout the country. (JY)

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ITV AND EDUCATION OF CHILDREN
OF
MIGRANT FARM WORKERS, INDIANS, AND INNER-CITY POOR:
CROSS CULTURAL COMPARISONS
OF
INTERNATIONAL USES OF MEDIA

Volume II
Case Studies

January, 1971

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

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ITV AND EDUCATION OF CHILDREN OF MIGRANT FARM WORKERS, INDIANS, AND INNER-CITY POOR: CROSS-CULTURAL COMPARISONS OF INTERNATIONAL USES OF MEDIA

Volume II - Case Studies

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Washington, D.C.

January 1971

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U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

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Bureau of Research

PREFACE AND ACKNOWLEDGEMENTS

The four case studies of media systems in Australia, Israel, Japan, and New Zealand are bound separately because they are too lengthy to be included in a single volume binding of the entire report.

Brief descriptions of these studies and an analysis of the lessons learned from these systems are included in Chapter III in Volume I of the report. In Volume II, the complete case studies are presented in order to provide more detailed information on the functioning of these systems for the convenience of readers whose interests in overseas media use extends beyond appraising its potential for the educationally disadvantaged in the United States.

However, because the information was collected in terms of these needs, the reader is strongly advised to peruse these studies in the context of the contents of Volume I. In order to help the reader avoid making faulty inferences and judgments, the Summary, Conclusions and Recommendations Section of Volume I are presented as prefatory notes.

The case study reports were prepared by Dr. Naomi Kies of the Department of Political Science, Communications Institute at Hebrew University in Jerusalem, Israel; Dr. Paul Kimmel, Director of the A.I.D. International Training Assessment Program at DETRI; and Dr. Jack Lyle, Associate Professor, University of California, Los Angeles. The case studies would have been impossible without the full cooperation of program officials and other informants--too numerous to list all by name--at the sites who gave so generously of their time and effort to help the researchers conduct their case studies. At each case site, however, there were a few people who provided especial assistance.

In Australia: Mr. Frank Watts, Director of Education for ABC in New South Wales; the Assistant Director, Miss Kay Kinane; Mr. John Collins-Jennings, Director, Division of Special Services, Department of Education, Victoria; Miss Margaret Morris, Correspondence School of the Air, Broken Hill, New South Wales; and particularly, Mrs. Jean Ashton, free-lance journalist in Adelaide, South Australia who shared her manuscript documenting the evolution of the School of the Air.

In Israel: at the Center for Instructional Television: Aryeh Shuval, General Director; Ya'akov Luberbaum, Deputy Director; Rashel Gazit, Educational Director; Hava Tidhar, Director of the Evaluation

Unit, who also wrote part of the case study report itself, and to the study's technical advisor, Dr. Elihu Katz, Director, Communications Institute, Hebrew University.

In Japan: Akiro Kojima, Chief Director, Correspondence School Broadcasts, NHK Broadcasting Center; Mr. Atsuja Tojo of the Radio and TV Culture Research Institute; Dr. Mitoji Nishimoto, President of the Japan Council on Correspondence Education and the "father" of educational broadcasting in Japan; Dr. Masunori Hiratsuka, Director General, National Institute for Educational Research; and Mr. Shinnosuke Takashima, Director, Radio and Television Culture Research Institute of the Nippon Hoso Kyokai.

In New Zealand: Mr. Don Allen, Supervisor of Broadcasts to Schools, NZBC; Dr. R. Sheen, Director-General of Education, New Zealand and his assistant, Mr. W. Ross; and to Mr. J. McVeagh, Principal, and the staff of the New Zealand Correspondence School, Wellington.

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SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

SUMMARY

The objective of this study was to appraise the potential of using instructional television (ITV) as the core component--that is, for the basic instructional communications function--in non-traditional school system design strategies for meeting the needs of three target groups--the children of migrant farm workers, American Indians and the inner-city poor.

The educational problems of each of the target groups were analyzed in terms of the conditions that are mitigating against success of traditional educational strategies with these groups. Case studies were prepared on the experiences of Australia, Israel, Japan, and New Zealand in using media strategies in educational systems which were designed to cope with some of the same conditions. The report on the Israeli ITV system represents the first published case study in depth of that system. The lessons adduced from these experiences, along with ITV system experiences in American Samoa and Niger, provided the basis for appraising the potential usefulness of a core ITV strategy with the three groups.

CONCLUSIONS

Key Conditions Facing Educational Planners

1. The job dependent movement of migrant farm workers, which is constant in neither rate nor direction, is the basic obstacle to the education of migrant children. The children lack the sense of continuity and consistent frame of reference needed for learning. They ordinarily change schools several times a year (when they attend school at all) as their parents move from one short-term job to another. They miss classes when their parents need help to bring in crops before spoilage. They cannot progress through school on schedule, and often drop out as soon as possible.

2. The quality of instruction offered to the children of American Indians is generally of poor quality. Teacher turnover is high and many of the teachers share community antipathy toward the Indians. The use of bilingual, bicultural educational materials is limited, particularly in the public schools which are attended by some two-thirds of the Indian children. Indian adults are rarely involved in the schools serving their children. Many Indians tend to live in sparsely populated areas so their children must be bussed to Federally operated day schools or placed in Federal boarding schools. In spite of the fact that boarding school placement has been almost universally judged psychologically damaging, the boarding schools continue to be used.

3. The schools serving the children of the inner-city poor have yet to devise a satisfactory means of teaching the basic academic skills in the early elementary grades. Without the foundation in the basics, the children are ill-equipped to cope with more advanced work and their performance deficit becomes larger through Grade 12. The situation is mutually frustrating to students and teachers. The students often are alienated or even hostile, and teachers fatalistically resigned to the impossibility of teaching many of their students.

Lessons Adduced from International Uses of Media

Cross-cultural comparisons of the international uses of media covered in this study support the following conclusions.

4. Requirements for Introducing a Core ITV Strategy

a. An explicit, specific, pedagogical rationale is necessary for core use of ITV, focusing on sharply defined educational problems; generalized rationales based totally, or largely, on anticipated educational cost-savings should not be used.

b. An intensive pilot program should be conducted, allowing adequate time for: initial development of high quality programming; training of system personnel, including teachers; utilization of empirical pupil performance evidence from the classroom on the learning effectiveness of the programming; assessment of system administration and operations; and collection of "hard" data necessary for reliable cost/effectiveness projections for the total system.

c. The ITV system should be used as the large-scale distribution system it is and should be designed in terms of either a large number of users or intensive use by smaller groups of participants.

d. An evaluation program, involving utilization feedback from the classroom based on objective resources of pupil performance, as well as teacher judgments, should be initiated at the outset for use during ITV system development, then subsequently institutionalized on an on-going basis during system operation.

5. Three Critical Accomplishments

a. ITV and other media have been used successfully to overcome the consequences on educational attainment of physical isolation from the traditional school environment.

b. ITV has been used successfully to upgrade the instructional skills of teachers as well as to provide basic training to paraprofessionals in classroom supporting roles.

c. ITV has been used successfully to teach basic skills, such as language and mathematics, in bilingual, bicultural learning situations.

The Potential of Core Use of ITV

6. With the Children of Migrant Farm Workers

Core ITV use would not effectively address the key educational problems of the children of migrant farm workers, namely, the lack of regular exposure to scheduled instruction. There is no evidence to suggest that when on the move children would be able to attend ITV "schools"--whether mobile vans, community viewing centers along migratory routes, or whatever--any more regularly than they now attend the public schools. Further, the cost of an ITV system, with the need for differential linguistic and cultural programming for the ethnically distinct streams, cannot be justified compared to other educational strategies. The changing character of the migratory work force--its diminishing size and the shorter distances being traveled (two-thirds travel only in their own home state)--suggest that special concentrated basic skill instruction in home community schools for the four to six months the children are there, accompanied by supplementary enrichment programs at stopping sites along the migratory stream route, is a potentially cost/effective strategy deserving further consideration and evaluation.

7. With the Children of American Indians

Core use of ITV appears to offer an effective means of accomplishing a significant reform in Indian education. A key condition affecting Indian education, namely, the lack of temperamentally suited and academically qualified--for cross-cultural situations--teachers, can be addressed by high quality bilingual, bicultural ITV programming coupled with intensive ITV training for classroom teachers and monitors. The teachers can be trained, not only in the ITV curriculum and tele-pedagogy, but also in cross-cultural communication and interaction techniques. Indian paraprofessionals can be trained to be classroom monitors, as has been successfully done in Niger. Viewing centers can be established in remote areas utilizing such paraprofessionals, thus reducing the need for long bussing or for early grade admission to boarding schools. Although designed primarily for core ITV use in Federal boarding and day schools and the viewing centers, the ITV programming would be adapted for selected direct teaching and for supplemental, enrichment, and remedial teaching in the public schools serving Indian children. The ITV system also can be used for pre-school and adult language and cultural enrichment programs.

8. With the Children of the Inner-City Poor

A core ITV strategy does not seem to offer any unique means of coping with the key conditions adversely affecting the education of ghetto children. There is no shortage of teachers in the inner-city schools; moreover, attempts to improve their instructional effectiveness through use of core ITV would likely have two serious drawbacks. First, institutional resistance of the existing teachers would be formidable and most costly to cope with. Second, it is possible that a boomerang effect would be created, in which the negative affect between many teachers and students would be increased by unjustified student comparisons of the classroom teachers with tele-teachers. ITV should be given further consideration for use in direct teaching and supplemental teaching roles in specially designed continuing education programs for "drop-outs" and in vocational training programs.

9. In Junior and Community Colleges

A special analysis on the potential use of core ITV in two-year colleges was conducted. This analysis was based on an examination of the problems confronting these colleges with particular emphasis on the function of these institutions as perceived by the institutions themselves. The phenomenal growth of the two-year college in the past decade has not been without major problems, primarily stemming from the inadequacy of the four-year model--in curriculum and approach--which was generally emulated in their design and development. The key problems in the two-year college search for identity are: the lack of faculty trained and experienced in coping with a heterogeneous, less academically qualified student body than is typical in four-year institutions; the need for closer community relationships than are typical with four-year colleges; the difficulties associated with offering a three-track program--remedial academic, general academic, and occupational. Core use of ITV is not recommended because of both pedagogical and economic problems; however, the selective use of ITV in direct, supplemental and enrichment roles in remedial and occupational courses is an educational strategy that should be given consideration.

RECOMMENDATIONS

The following recommendations were made on the basis of this study.

1. Core use of ITV--that is, using ITV for the basic instructional communications function in direct teaching in

all curricular areas--is recommended as a concept for accomplishing a large-scale curricular reform of Indian education. It is further recommended that the concept be pilot tested in existing Federal boarding and day schools and in proposed Federally established viewing centers in remote locations on Indian reservations.

2. The ITV programming developed under 1. above should be adapted for direct teaching in selected courses and for supplemental, enrichment, and remedial teaching in the public schools serving Indian children.

3. ITV programming for the kindergarten through Grade 6 levels should incorporate an Indian-Anglo bilingual, bicultural approach, with programming thereafter only in the English language. The curriculum at the secondary level should provide vocational and technical, as well as academic/college preparatory concentrations.

4. The ITV system should be used for role-concept and human relations skills training of dormitory aides in boarding schools, as well as for cross-cultural tele-pedagogical training of teachers in the boarding, day and public schools.

5. The ITV system should be used to train Indian paraprofessional teaching aides as ITV classroom monitors, particularly for use in local viewing centers which should be established in remote locations on the Indian reservations. Kindergarten through Grade 3 levels would be offered in these viewing centers, which would serve as feeder schools in the boarding, day, and public schools for the remaining grade levels.

6. It is recommended that the ITV system concept be pilot tested with children in the Navajo area, with subsequent diffusion to other Indian tribal groupings starting immediately after the pilot period. The system should be introduced in an area, one grade at a time, starting with the kindergarten level; a generational social change strategy is being recommended, not a quick-fix solution to the current accumulated educational deficit problem.

7. A six-year pilot project in the Navajo area, in which the ITV system concept would be developed and tested at the kindergarten, 1st and 2nd grade levels, is recommended. The pilot project would be conducted as an integral part of the sixteen-year period required for total kindergarten-12 system development. Six years will be required in order to allow sufficient time to accomplish five objectives.

a. To establish a firm foundation for development of the operational ITV program by providing an initial two-year period during which project staff will be recruited, project facilities established and curriculum planning accomplished in the context of an in-depth exposure to, and study of, the Navajo culture.

b. To develop and test the ITV system concept, including all operating sub-systems--curriculum preparation, ITV program production, training and utilization--as well as the learning effectiveness of the ITV programs and supporting teacher and student materials in the classroom.

c. To assess the feasibility of using the ITV system for pre-school language, socialization and learning readiness programs and for adult literacy and other special education programs.

d. To collect valid costing data, and reliable demographic data on the Indian population, in addition to that currently available, in order to prepare sound cost/effectiveness estimates for implementation of the kindergarten-12 operational system for all Indian children.

e. To develop the plans for continuation of systems development beyond the pilot project period and for its diffusion to the remaining Navajo children, Indian children on the reservations of other tribal groupings, and to the public school systems near the reservation areas serving Indian children.

8. As a first step, it is recommended that representatives of the Indian tribes, including specifically the Navajo, be involved in a review of the rationale for the ITV system concept and, assuming their concurrence in the potential of this approach to Indian education, be further involved in program management during all subsequent phases of system development and operation.

9. Finally, it is recommended that a detailed implementation proposal be developed on the basis of planning and feasibility studies beyond the scope of this research (e.g., engineering studies of feasibility of using 2500 megaHertz transmission systems). The proposal, which should be developed with Indian participation, would refine the pilot project design and cost estimate of $7,268,000 for the six-year period, and thus provide the documentary basis for obtaining the support necessary--political, legistlative, administrative, and fiscal--to execute the proposed pilot evaluation.

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CASE STUDY

EDUCATIONAL RADIO AND TELEVISION IN AUSTRALIA

BY

PAUL KIMMEL

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EDUCATIONAL RADIO AND TELEVISION IN AUSTRALIA

I. INTRODUCTION

The purpose of this case study is to look at educational radio and television in Australia especially as it is used to reach students in remote and isolated geographic areas. Special attention is given to the Royal Flying Doctor Service School of the Air, a two-way radio communication system unique to the outback in Australia. The study took place during the first school term in 1970. Between May 5 and May 22, visits were made to Sydney, Melbourne, Broken Hill, Adelaide and Perth, Australia.

II. AUSTRALIA'S EDUCATIONAL SYSTEM

Providing a free public education is the responsibility of each of the six separate states in the Australian Commonwealth. In each state there is an Education Department under a state cabinet minister with a Director General of Education as its permanent head. There is also a federal office, the Commonwealth Office of Education, whose functions are to undertake research into Australian education, to provide for education in the Northern Territory, and to advise the Federal Government on nation-wide educational problems. Outside the state education system are many independent private schools for both boys and girls, often modeled on the English public school and generally under the control of a religious denomination. There are also a number of technical high schools for students interested in specific vocational training; these schools do not give formal educational degrees.

Each state has its own courses of study, examination procedures and educational methods. Cooperation and limited coordination among the states is brought about through periodic meetings of educational officials and subject-matter specialists. Some uniformity among the states is achieved by the use of similar certificate examinations and matriculation examinations. The certificate examination, covering at least four subjects, is administered by the State Department of Education to all students who have successfully finished the 10th grade and desire to take it. The matriculation exam is required for university entrance.

Many schools rely equally on school certificate examination results and teacher evaluations in the final assessment of students at the end of the 10th grade (4th form). Some educators feel the school certificate examination (which is becoming more and more unwieldy, administratively) may be abandoned, with teacher evaluations and regular internal examinations taking its place. There is no accreditation procedure for students going to universities, although plans for one are being considered at the federal level.

The rather formal,British-modeled educational system in Australia is more curricula-centered than student-centered. Attendance is compulsory to age 15 (16 in Tasmania) and a majority of students leave at this age, although a system of scholarships and bursaries make higher education accessible to almost any student who can pass the school certificate and/or matriculation examination. There is little recognition in Australia of special educational needs of groups of students having different cultural or economic backgrounds. Some states provide somewhat different curricula and examinations for students of greater and lesser academic ability, but there is currently a tendency among educators to move away from any type of track system based on ability in the secondary schools. The only group of children who receive specialized education are those in remote areas who depend entirely or in part on their state's correspondence school for their education. (The correspondence school and the School of the Air are discussed on pages

Although only one Australian school was visited, the author spoke with several students outside of school. Their general reaction to their current educational experience was at best neutral. Four young adults who had recently finished their education tended to recall it as a rather limiting and to some extent stultifying experience. Educators are presently considering expanding school curricula, but it is improbable that the system will become more student-centered in the near future.

III. THE AUSTRALIAN BROADCASTING COMMISSION

For several years, Australia has employed the radio and television facilities of the Australian Broadcasting Commission for educational purposes. The Australian Broadcasting Commission (ABC) is a statutory authority or corporation required under the Broadcasting and Television Act of 1942 to broadcast "adequate and comprehensive" programs. It broadcasts over transmitters provided and operated by the Postmaster General's Department. Although it is an independent body, ABC is directly responsible to and funded by the Australian Parliament. Policymaking is carried out by a commission of nine representatives of the Australian people appointed by the six state Governors General. This commission acts in a part-time capacity. The General Manager of ABC is the chief executive officer of the commission. He, a Deputy General Manager, and an Assistant General Manager form the senior management group for the ABC.

The ABC began radio broadcasts in July 1932, taking over eight metropolitan and four regional stations that had been operated be the Australian Broadcasting Company. (The company's contract was terminated by act of Parliament.) The Commission now operates a system of three radio networks: (1) the first network includes seven metropolitan medium wave stations broadcasting general entertainment and information programs; (2) the second network, with seven metropolitan medium wave stations, broadcasts programs for special groups, including the schools; and (3) the third network, with 56 medium wave stations covering the more populated areas of Australia and New Guinea, carries a combination of programs from the first and second networks. At the end of 1969 transmission had been extended to cover about 95% of the population.

The ABC began a national television service in 1956 with transmission in Melbourne and Sydney. By the end of 1969 transmission had been extended to cover about 95% of the population with seven metropolitan transmitters, 33 regional transmitters, and 22 translator stations serving small, more isolated areas. Stations in the Southeastern section of Australia can be linked by coaxial cable for simultaneous transmission.

ABC also operates a domestic and overseas short wave service. The domestic medium and short wave stations can be linked for simultaneous transmission.

State Television and Radio Broadcast Facilities

Production facilities for educational programs vary from state to state. The Gore Hill station in Sydney where the national broadcasts and many of the New South Wales broadcasts are produced, has two large studios with at least eight television cameras and all the necessary services for a full-scale broadcasting operation. Television centers in other states do not have such extensive studio facilities. The typical state has one studio with about three television cameras. It is possible, however, for educational broadcast producers from any state to go to Sydney for help, particularly in the area of television film.

Although educational broadcast producers have access to the most modern equipment and studios available in their cities, they must compete with all other departments of ABC for these resources. The reactions of various producers to this situation were mixed. Some said they had always been able to get the kind of help they needed at the time they wanted it. Others were of the opinion that education tended to get a less enthusiastic performance from technicians and talent than did some of the other services. In some instances, producers, or even supervisors, had to go outside ABC for the necessary production resources to fit their time schedules. This was done rarely, however, as expendable funds for educational broadcasts are primarily allocated for actors, script writers and copyright fees.

IV. SCOPE OF EDUCATIONAL BROADCASTING

Currently about 11,000 schools (95%) are equipped with radio receivers and nearly 5,000 have television receivers which enable them to use ABC broadcasts. The ABC is the only broadcasting system in Australia providing programs for schools. (Australia's commercial stations do not produce such programs.) All programs are planned and transmitted for use in a classroom situation where a teacher will be working with a group of students.

The ABC broadcasts educational radio programs between 11:00 A.M. and 12:00 Noon and 2:10 P.M. and 3:00 P.M. each school day with an additional 25 minutes each morning for the kindergarten of the air. Since most radio broadcasts are between 10 and 20 minutes in length, about 36 different programs can be broadcast each week in each state or about 216 programs per week can be broadcast throughout Australia. About 3,500 are broadcast annually which accounts for between three and six percent of the total ABC radio output.

Of the approximately 30 radio programs broadcast in any state in a typical week about ten will have been produced for the entire population (usually in Sydney). These national programs include: "Let's Join In" (infants' story and music); "The World We Live In" (current affairs); three series of music programs; and "French for Schools." Another 15 programs will have been prepared within the state. Every state has its own broadcasts in primary and secondary English literature and expression, social studies, history, and geography; singing; and correspondence school work. The five remaining programs will have been produced in and obtained from other states with similar educational needs. (A typical state timetable for a week appears in the appendix.)

Since 1963 ABC television transmitters have been available for educational broadcasts for the entire school day--from 9:00 A.M. to 3:30 P.M. Approximately ten to 14 television programs are presented to the schools each weekday, for an average of 60 transmissions a week in each state or 360 transmissions in the whole of Australia. Although most television broadcasts are between 20 and 30 minutes in length, many are repeated once, twice or even three times during a week so schools with different timetables will be able to view them. In 1969, approximately 3,500 different educational television programs were broadcast throughout the continent.

During a given week, approximately half the television programs will have been produced at the state level, about 25% will be shared with other states, and about 25% will have been bought from other educational networks such as the BBC (British Broadcasting Corporation) or ORTF (Office de Radiodiffusion-Television Francaise). The only nationally produced television program is "Play School," a program for pre-school children broadcast twice each day.

Subjects covered by educational television include: current affairs, mathematics, science, social studies and music for primary students; science, mathematics, English and geography for intermediate and secondary students; and history, German, French, music and vocational guidance for secondary students. (A sample weekly program schedule for educational television is attached in the appendix.)

V. DETERMINATION OF BROADCASTING POLICY AND PROGRAMS

Responsibility for defining broadcasting policies and program direction is invested in educational authorities and ABC officials. The Director General of Education in each state acts as chairman of the state's School Broadcasts Advisory Committee. These committees set up general guidelines and recommendations for the school broadcasts and in theory approve each production before it is sent to the students. All the Directors General meet annually as a Federal School Broadcasts Advisory Committee. This committee is chaired by the ABC Director of Education. It coordinates and makes recommendations for programs produced at the national level.

The Director of Education of ABC is in charge of all the school broadcasts and is directly responsible to the ABC senior management group. Working under him at the national office in Sydney are an assistant director, two fereral education program officers--one for television and one for radio--and an administrative staff. These officers are primarily responsible for the administration and evaluation of educational broadcasting and coordination with the state education departments throughout the country.

In each of the six states there is a Supervisor of Educational Broadcasting who serves as the ABC state counterpart of the federal Director of Education. Under these supervisors are ABC education officers responsible for program production. (In the two most populated states there are also assistant supervisor positions.) There are presently 41 education officer postions in Australia, plus seven specialist trainee positions. Specialist trainees are attached to the federal office, and seconded to the states for one or two years prior to becoming education officers. Each state has administrative staff, as required.

ABC education officers are recruited from the teaching profession on the theory that it is easier to train a teacher in broadcasting than to train a broadcaster in teaching. All education officers must have at least a degree at the first university level, teacher training and, if possible, teaching experience. They must display leadership ability, talent in communication, and some inclination for and potential in creative expression such as drama, music or writing.

Since a university degree is a prerequisite for the position, the teaching experience of most education officers tends to be in secodary schools (teachers with university degrees in Australia are normally appointed to secondary teaching.) Many are graduates in the arts because of the requirement of an interest in creative expression.

Candidates for the position of education officer are interviewed by the state supervisor.[1] Candidates chosen as specialist trainees must serve a year's probation before becoming an education officer. This trial period may last as long as two years, if further experience and training appear to be required.

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[1] An attempt was made in the 1960's to develop tests of characteristics required to be a successful education officer. Those who had been in these jobs for some time were asked to fill out personality inventories so that potential candidates could be matched against their profiles. The education officers, however, resisted this attempt at measurement.

The position of education officer falls within the civil service system of the state governments. Education officers are ranked into three grades and may have opportunities for promotion to supervisory positions.

There is no recognized training institution in which an individual can prepare for a career in educational broadcasting in Australia, so the ABC education department conducts its own in-service training programs. Education officers are given approximately six months on-the-job training before they are put in charge of a production. When given production responsibility they have authority to make program judgments and put the show into final broadcast form. Productions are usually reviewed by more senior education officers or supervisors prior to release for broadcast.

In addition to recruiting education officers from the teaching profession, ABC relies directly on teachers as consultants and talent in many of its productions. This usually is done when the ABC production staff lacks expertise in the subject area. In four of the states, teachers have been seconded to ABC by education departments to serve as studio teachers and producers for one to four years. During this time they continue to receive their salaries from the Departments of Education, although serving as full-time employees of ABC. Their qualifications, training and responsibilities are much like those of the education officers. At present there are positions available for 12 seconded teachers, most of them in the fields of mathematics or the sciences to complement the arts backgrounds of most of the education officers.

In addition to the in-service training for education officers and seconded teachers, training schools are held in Sydney where these producers learn professional broadcasting techniques. For example, in 1968 and 1969 a two-week school on radio production and script editing was held for education officers from all states. A television planning school was held for supervisors and senior television producers; a film techniques course was held for experienced educational television producers, and a television planning and program evaluation course for the series, "Know Your Australia," was held for producers involved in making the films.

VI. PROGRAM PLANNING AND SOFTWARE DEVELOPMENT

The School Broadcasts Advisory Committee of each state is responsible for program planning and review. These committees are chaired by the state Director General of

Education and include representatives from Roman Catholic and private schools, and from teaching bodies and specialist fields in the Department of Education. The secretary and executive officer of each committee is the ABC state supervisor of education.

These committees meet two or three times each year to review broadcasts and plan the schedule for the following year. They examine reports from their planning and appraisal sub-committees and submissions from ABC education officers. They decide whether an available program or series fits into the state's school syllabus; they can veto programs they have authorized the ABC in their state to produce.

The planning and appraisal sub-committees consist of subject experts, classroom teachers and representatives of various educational bodies. At their planning meetings, the broad aims of a program or program series, the series title and program topics which fit curricula needs are established. Education officers responsible for producing programs in specific subject areas attend meetings of the sub-committees dealing with these subjects. In this way the educators' knowledge of classroom teaching is joined with the producers' judgments on proper use of the media to present a topic. The sub-committee for a given series may meet several times, if necessary, to advise the producer (or in cases where the education officer is not familiar with the subject matter, the studio teacher and/or subject expert) in developing the broadcast.

In practice, ABC has often taken the lead in determining the direction of educational broadcasting with educators implementing and refining their initiative. A brief history of the development of television broadcasts for the schools will serve to illustrate.

Between 1956 and 1963 most educational television broadcasts were produced entirely by the ABC on an experimental basis. By 1962 all of the six state ABC affiliates were producing educational television broadcasts designed for the local school, but less than 500 schools had television receivers. By 1963 most of the school television programs were aimed at 8 to 11 year olds. This was done because the primary school with its class teachers and more flexible time schedule was able to make the greatest use of the programs offered. At this time, a special meeting of the Federal School Broadcast Advisory Committee was held to discuss the future role of TV in education. It was decided that the programs being broadcast were needed, but that instructional programs in mathematics and science for secondary school students should be produced.

After this meeting, the State Education Department began to promote the more extensive utilization of school broadcasts. They provided television sets to the schools or through subsidies allowing schools to purchase them. They also "leased "[2] subject-matter specialists to the ABC to help with the production of the mathematics and science instructional programs. By May, 1964 program output was doubled and by 1966, over 3,750 schools were equipped with television receivers.

By 1969, state educators decided the need for direct teaching programs in mathematics and the sciences had been met. Teachers had come to understand the new curricula (especially the new math) and were able to undertake this teaching without the help of the educational television broadcasts. At this point ABC and the Federal Advisory Committee decided to produce more TV programs in the areas of social science, literature, English, geography and history. It was also decided that the purpose of these programs would be to enrich and supplement the course work of upper primary and secondary school students. However, this programming is just getting underway in 1970. Because of the limitation on funds available at the time of the case study site investigation, the decision had been made to produce fewer programs but of higher quality than the previous direct instructional programs. For reasons of economy, these more expensive (often film) productions will require more sharing between the states.

Although the need for these programs had been expressed by teachers, educational authorities have been somewhat reluctant to make major program recommendations to the ABC, especially if they involved additional financing. Therefore, ABC has made many programming decisions on its own and then gone to the educational authorities for approval and support.

Presently, plans are being considered to double the amount of funds available to the ABC for staff and productions in educational television. This would permit more programs to be produced and a realization of current plans to expand film productions.

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[2] The procedure of releasing teachers to the ABC as broadcasters, consultants, or liaison officers while they remain under the employ of the Department of Education is known as seconding.

Steps In Software Development

When the general aims and the outline of the program series have been worked out by the planning and appraisal sub-committee, the plan is submitted for modification or approval to the state advisory committee. With this approval, the producer in charge of the series carries out the necessary steps to get the program to air. This will usually begin with a script conference (held by the producer, his studio teacher and expert consultant) on the teaching points to be made in the program, the program format and the need for film or other illustrative material. The producer then gathers the necessary visual and/or auditory materials, selects the necessary talent and shoots film sequences or selects and edits library film. Concurrently, a script is prepared by the producer with the collaboration of a script writer and studio teacher, where required. On all matters arising during the production, including approval of the final script, an executive producer (a more experienced and usually a higher grade education officer) serves as the producer's point of reference and consultant.

After the necessary rehearsals and recording, the production is taped or filmed. (All programs are recorded so they can be edited and distributed to as many states as desire them.) Before a tape or film is released for the state School Broadcasts Advisory Committee's final review, it is previewed by the executive producer. Whenever possible, these previews are held in classroom situations so that their effectiveness in reaching students and teachers can be observed under actual broadcast conditions. Producers are required to observe all of their programs in a classroom situation at some time, even if a pilot screening is not possible.

Although official authority for final approval of programs rests with the state advisory committee, this responsibility is sometimes delegated to the liaison officers who are seconded to ABC by the Department of Education to coordinate and evaluate the broadcasts and the educational needs of their state. The producer's responsibilities end when he hands the recorded program to a transcription, film or engineering library.

VII. PRESENTATION OF SCHOOL BROADCASTS

The educational departments of ABC have as one of their major goals the production of quality programs which will meet the requirements of the state School Broadcasts Advisory Committee. Most programs are produced for a mass audience and are designed to reach the slightly better than average student at a certain grade level. A fairly direct standardized approach is used. Little emphasis is placed on presenting material in ways to accommodate different types of students. Ancillary material, such as teacher's notes, are distributed by ABC to help instructors integrate broadcasts and classroom discussions. (See p. 19 for an explanation of these materials.)

There has been a recent tendency, particularly in educational television to produce programs that will enrich and supplement classroom presentations instead of directly teaching a subject. In the areas of social studies, health and English, for example, many broascasts are now produced on the assumption that topics will be taught adequately in the classroom and that the program will enrich the work being done by the teacher. The aim of these broadcasts is to produce a number of different ideas of which the teacher will only use a few. Producers feel good teachers will follow up on those ideas which contribute most to the approach they are using to the subject, whereas the weaker teachers will use broadcasts to fill class time.

However, there are still many programs in music, foreign languages, mathematics and science that provide instruction for students whose teachers may be short of information or feel incompetent to provide the best kind of lesson. These programs are primarily intended for teachers in the more rural, secondary schools, and are viewed as a means of giving in-service training to teachers in new curricula and teaching techniques. These instructional broadcasts usually are produced as a series, which makes it necessary for teachers to plan well in advance to coordinate their classroom presentations with the broadcasts. In some of these schools, teachers must teach a number of subjects in which they have not been trained. In addition to the school broadcasts, correspondence school lessons are used to fill the gaps in these situations.

Broadcasts can be used to bring personalities or events to students that they might not otherwise be able to hear or see. For example, radio is particularly well-suited to the dramatization of history and English, and to expert discussion of contemporary topics and current affairs. Television seems best adapted to documentary programs, science presentations and social studies. These programs can stimulate students, and effective teachers can capitalize on the material presented.

Although Australian broadcasters are only beginning to consider the prospects, there is good reason to suppose that integration of the various media will prove even more effective in catching student interest. Radio-vision and the use of two-way broadcasts for television have important implications in this area.

VIII. UTILIZATION OF PROGRAMS

Individual school teachers have the option of using educational broadcasts in the classroom. Use of broadcasts is encouraged by educational liaison officers seconded to ABC by state educational authorities, and by the availability of ancillary materials such as program schedules, teacher notes, and in some cases, students' notes on all broadcasts. These materials are available at cost to teachers and students in all of the states.

Data on utilization of school broadcasts are difficult to collect and rather sketchy. Figures gathered in 1969 for secondary schools in one state indicate that most of the educational television programs are viewed by less than 25% of the schools on a regular basis, with only mathematics, science and French programs reaching one-third or more of the schools.[3]

Both educators and broadcasters agree that radio and television broadcasts are used more often by primary school teachers than by secondary school teachers. Secondary teachers face greater difficulties with time schedules of their students throughout the entire school day. The length of a program can also pose problems. Even if the teacher has prepared carefully to use the broadcast, he may find himself with too much to do in too little time at the end of a program, especially if he has a large class. The timetabling problem can be alleviated for radio broadcasts to some extent by tape recording the programs, which many secondary teachers do. However, very few schools in Australia are equipped for video tape recordings;[4] and even though educational television programs for secondary students are telecast more than once during the week they are presented, scheduling difficulties remain a serious concern.

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[3] These evaluations of utilization are subject to technical problems which will be discussed later in the report.

[4] It is hoped that a majority of secondary schools will be equipped with video tape recorders by 1972, but there are currently only a few in South Australia and Queensland.

IX. ANCILLARY MATERIAL

Education authorities consider it essential to give teachers sufficient information to prepare for broadcasts and integrate them into the teaching plan. The principal types of ancillary materials include: (1) wall sheets for each program series listing the names and times of broadcasts; (2) teachers' guides--booklets giving the aim and scope of all radio and television series for a school year; (3) teacher notes providing commentary on radio and television programs for primary and secondary grades, with special issues for math and science where more complete illustrations are needed (Teacher notes are sent out monthly. There are also teacher notes for the kindergarten radio broadcasts and the play school TV series which are sent on request to schools with kindergarten classes.); (4) teachers' handbooks listing music and sources of stories and poems for lower primary teachers using radio broadcasts.

In certain subject areas printed material for students is considered necessary to increase the educational impact of broadcasts. Texts of language broadcasts, illustrations for history or social studies programs and the music and words of songs are all published in booklet form. In some states, this material is presented in comprehensive booklets for primary and for secondary students, while in others booklets are published under separate subject headings.

The trend has been toward producing more booklets for specific subject areas or particular age ranges with more detailed information and more illustrations. Broadcasters and educators feel the intrinsic value of the background material these booklets contain makes them especially useful for more senior pupils.

The writing and editing of these ancillary materials is divided between the state departments of education, especially their seconded teachers and liaison officers at ABC, and ABC itself. Ancillary materials are intended to pay for themselves, although in some cases the state departments of education or the Commonwealth subsidizes the printing and distribution of booklets so schools and students with less resources may have access to them.

Booklets and notes for educational broadcasts in 1969 included 41 different titles with 1,270,000 copies printed.

(A listing of the booklets published by the ABC education department and sold at cost to students is included in the appendix.)

X. THE LIAISON OFFICER

The primary means of linking the classroom to ABC educational broadcasting is the liaison officer. These officers are teachers seconded to ABC by the state departments of education. There are presently 14 liaison officers with ABC throughout Australia. They inform ABC of the educational needs of teachers and students, suggest new programs and improved production techniques, and report on reception quality in the schools. They inform teachers of new educational broadcast series, and plans for future programs by ABC.

Liaison officers preview broadcasts, talk with teachers and students about them and take part in planning and appraisal sub-committee meetings. They carry out the library research necessary to assist in developing productions and ancillary materials. Generally, the ABC prefers to use these officers to publicize and promote educational broadcasts. On the other hand, education authorities see the liaison officers as representatives of the teachers whose primary responsibility is to identify teachers' problems in using broadcasts and seek solutions for them.

Although the job description calls for liaison officers to spend a great deal of time in the schools, in point of fact, administrative duties require them to spend most of their working time at ABC.

Liaison officers conduct evaluation studies of broadcasts, but most of these studies have been of an individual school or program. However, results from a sample survey of all school listeners in Melbourne and Sydney undertaken in 1969 will soon be available showing the percentage of schools using the various radio and television broascasts.

XI. TEACHER TRAINING AND EDUCATIONAL BROADCASTS

Both broadcast and educational authorities in Australia feel more interaction between classroom teachers and producers of educational programs is needed. Teachers' colleges and universities do not emphasize utilization of educational broadcasting. Therefore, most teachers are not informed about the programs until they are engaged in teaching. To some extent, liaison officers and ancillary program materials meet the needs of instructors for information about school broadcasts. However, closer collaboration is needed if the full potential of the school broadcasts is to be realized. In Tasmania, for example, teachers' seminars have been held in various school districts to consider plans for educational TV series and to view some pilot programs. In this way, the studio teacher and producer meet the classroom teacher during the developmemt of programs so a team-teaching system can be built to the benefit of the students.

The ABC has tried to program courses, especially on television, to update teacher training and improve professional expertise. It has been found, however, that no matter when such programs have been broadcast (during lunch break, after school or on Sunday morning), the audience has usually been less than 50% of the potential. To solve this problem, the Education Department of Victoria, in conjunction with ABC, has conducted three-day-long, in-service training seminars during school hours with 100% involvement of teachers. On the day selected for the seminar, students were given a holiday and the teachers traveled to selected centers for the meeting.

Each seminar was built around a special television program. The first of these programs explained some techniques for introducing a new arts and crafts course into the primary schools. The program was previewed by group leaders (teachers), who in turn conducted discussions and gave instructions regarding the use of broadcasts. The verdict of the education department was that this project was a complete success and similar seminars have been conducted in secondary science and secondary mathematics.

The author viewed a film which is to be used in a Victoria in-service teacher training seminar in primary school science this year. This film is intended to encourage science teachers in the primary schools to take a more child-oriented view of teaching. It shows a teacher who has been able to capitalize on the children's interests and resources to introduce science. In an accompanying printed guideline for group leaders, emphasis is placed on showing the teacher that he can rely less on traditional education techniques and make better use of the resources in himself, the school situation and his students.

The success of the Victoria in-service seminars has been closely observed by educators in other states, and it is likely that they will be emulated (at least in some of the more populated states) in the near future. It is impossible to tell at this point what the impact of these training programs will be on teachers. However, they seem to offer one of the most promising possibilities observed by the author for relating Australia's education to the needs, interests and abilities of individual students.

XII. THE TARGET STUDENT POPULATION

No statistical information is available on the number or characteristics of students in Australia using educational broadcasts. It appeared to the author that most of the students were fairly homogeneous in socio-economic characteristics, coming from the equivalent of United States upper-lower to middle-class families. The vast majority were white and of Protestant background. Several educators remarked that Australia tends to be a classless society; most inhabitants are white, Anglo-Saxon, middle-class Protestants. There has been an influx of immigrants recently, but most of them have come in small numbers and have been quickly assimilated into the populations of the large cities. (ABC is currently considering a broadcast series on English for immigrants, which would be its first educational program for a minority group.)

XIII. COST OF EDUCATIONAL BROADCASTS

The total ABC appropriation for 1968-69 was $47,600,000. Of this amount, approximately $1,600,000 went into capital expenses and $46,000,000 went into operational and administrative expenses. It is impossible to give exact figures on the cost of educational broadcasting because funds appropriated by Parliament are utilized for the general service of ABC. Except for administrative personnel at the national and state levels, educational broadcasts share funds and services, and technical and engineering facilities at studios and transmitters, with other parts of the ABC. The difficulties in separating educational budget from general ABC budget and in estimating the number of pupils who watch or listen to educational broadcasts, make it impossible to calculate the expenditures per pupil for educational broadcasting.

The education departments in the different states also contribute funds to educational broadcasting indirectly. They pay the salaries of studio teachers and liaison officers seconded to ABC in their respective states. They also pay subsidies ranging from 20% in New South Wales to 100% in Tasmania for the installation, maintenance, and repair of radio and television receivers in the schools.

XIV. THE PLACE OF EDUCATIONAL BROADCASTS IN THE EDUCATIONAL SYSTEM

The existence of six well-defined state educational systems with somewhat different courses of instruction, student promotion policies, and term dates and public holidays, causes difficulties for both students and broadcasters. Students may find the transfer from one state system to another requires some adjustment either in courses required or class levels. Educational broadcasters find working at the state level is less economic of manpower, studio facilities, equipment, and other factors than is working at the federal level. However, the use of educational radio and television programs on a shared basis among the states and the nation-wide coverage of ABC have (like the school certificate examinations) tended to standardize state school curricula and teaching techniques to some extent. The ABC educational broadcast officials feel the production of more programs for a national audience of students will promote and continue this standardization process.[5]

Other than the obvious introduction of radio and television receivers into the schools, broadcasts have had little effect on school system design or curricula. The country's educators have not employed the media to reach youth who are not enrolled in school or adults who wish to further their education. As noted previously, most changes in curricula and teaching techniques mentioned in this report have been suggested by education authorities more oriented to traditional educational systems; few recommendations advanced by broadcasters have been adopted. The recent in-service teacher seminars in Victoria and the general shift to more enrichment programs in educational television may soon have some impact on teaching techniques and subject matter. However, it is too soon to make any judgment regarding this impact.

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[5] The filmed series on "Know Your Australia" is one of the first attempts by the head office of the educational broadcasting service to produce a series of programs that will be of interest in all states, drawing on the production resources of the different states. The federal education officer in charge of television was running a training program for the education officers from each state producing this series while this author was in Sydney. Producers shared information on details of program content and focus. Suggestions for future programs in the series were made and discussed in light of their possible utilization across the country. Some attempt was made to link the program in terms of their themes.

The producers were enthusiastic about the series and felt that the training session in Sydney was most useful in upgrading the quality of their programs. They planned to take the ideas that had been suggested at the training session back to their states to see how they fit in with the overall program suggested by the advisory committees.

The following statement appears in notes on the agenda of the 1969 annual meeting of the Federal School Broadcasts Advisory Committee: "... it is suggested we [FSBAC] might examine what is being offered to schools in 1969 [by ETV] and see to what extent it is appropriate to current classroom techniques and syllabus needs..." This statement, along with other comments made by educators and broadcasters, suggests the prevelant attitude that needs of the teacher and the school system should determine the content and approach of educational broadcasts.

It is the author's impression that both educational and broadcasting authorities feel traditional education methods are generally preferable for educating Australian students to television or radio teaching. This is evidenced by the considerable reduction in the number of educational television productions over the last five years. For example, in 1965, the state of Victoria was producing approximately 135 educational television programs, whereas in 1969, only about 30 programs were produced. In Tasmania 107 television productions were made in 1966; 26 programs were made in 1969. This drop in productions (which was observed in all states) was primarily due to the change in teachers' demands for the new math and science programs, as expressed through the planning and appraisal sub-committees. When teachers had learned how to teach these courses from television programs produced in 1965-67, they no longer needed the broadcasts.

Mr. John Collins, Head of the Division of Special Services for the Department of Education in Victoria, felt that although educational broadcasts were being used by fewer teachers in 1969, the users were genuinely interested in obtaining maximum benefits from them. He felt that a shortage of skilled teachers, time-tabling problems (especially in the secondary schools), and the extra preparation and ability needed to make effective use of the more subtle, enrichment-type broadcasts, reduced the number of teachers who could use the programs. However, good teachers would fit the programs most relevant to their subject matter into their teaching schedules in effective and interesting ways.

Teachers who use the broadcasts less frequently cited the following problems: (1) lack of resources to fully exploit the ideas presented in the programs; (2) classes too large to use broadcasts effectively in the available time; (3) classroom space too limited; (4) children too heterogeneous in their backgrounds and abilities; and (5) timetables prohibiting presentation of the broadcast to their students. Broadcast officials feel that through increased training in teachers' colleges and in-service programs, teachers could learn to use the programs despite the limited resources and problems mentioned above.

Some teachers find it difficult to imagine how they can use the new, enrichment-type broadcast in their teaching program. They look for specific teaching objectives which they found in the earlier, direct-teaching type of program. Unless teachers are trained to use these more recently produced enrichment programs, they probably will not use the broadcasts effectively (if they make use of them at all) in the classrooms.

XV. EVALUATION OF EDUCATIONAL BROADCASTING

As mentioned earlier, the main responsibility for evaluating educational broadcasts lies with the liaison officers. Most of their evaluations are based on personal discussions and correspondence with teachers and education officials regarding problems in using given programs. Large scale, professional evaluation studies are difficult to undertake due to lack of money and personnel in both state departments of education and ABC. There has been some discussion of hiring an independent organization to conduct a national survey of the impact of educational programs on students, but this is, at best, in the planning stages.

The ABC sends out questionnaires and report cards for teachers to answer regarding some of its series. Several technical problems are associated with these evaluation methods. Many questionnaires sent out by ABC are ignored by teachers, or filled out as the teacher thinks ABC would like to have them filled out. In some cases, a second mailing has produced very different results in the same school, leading to a suspicion that headmasters or other officials may be completing these forms rather than the teachers who use the programs.

Some of the same problems occur when the questionnaires are sent out by state education department officials. Although return of these is usually better than when ABC does the mailing, the probability of ingratiation increases. Perhaps the best technique for reducing the problems of nonresponse and ingratiation is use of the report card that is filled out by the teacher as the program is being used. There was little mention made of these cards either by education or broadcast officials. The author's impression is that they are only sparingly used and not systematically aggregated in making program evaluations.

Broadcasts are also evaluated by observation of programs in the classroom and, to a limited extent, in the home. The technical problems of this method concern the effects of an external observer upon the audience. Liaison officers and ABC education officers frequently feel the children are on their best behavior when they visit the classroom. To avoid this problem would require more visits and a familiarization process than time and money permit.

The majority of the evaluation data available are figures on the percentage of schools using current programs and series. The underlying rationale is that programs with a large audience should be continued because they are meeting educational needs, while those with lower percentages or which have lost a substantial proportion of viewers should be revised or dropped. The most sophisticated of this audience research was begun by education liaison officers in Victoria in 1969, and is being expanded to New South Wales in 1970. The results of the 1969 study indicated that programs with the highest percentage of listeners at the secondary level are those which were examination oriented[6]--either the school certificate or the matriculation examination--and those in the languages. These surveys suggested that more private secondary schools are using the programs than state secondary schools. Most of the programs show little change in size of audience between 1968 and 1969, although there is a slight trend toward fewer schools using the broadcasts.

No data are available from ABC or the education departments with which to make comparisons of student performance or achievement, or to assess the effectiveness of the school broadcasts.

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[6] Many secondary students and teachers rely heavily on school broadcasts (especially radio) to get the most current information on topics about which they will be tested in the school certificate and matriculation examinations. Broadcasters are not very satisfied with these programs and would probably eliminate them if it were not for the demand from the secondary teachers and students.

XVI. THE CORRESPONDENCE SCHOOL

Australia has developed a system of correspondence education to meet the needs of individual pupils who do not have access to normal schooling because of geographic isolation, illness, or the nature of their parents' employment. In addition, correspondence courses may be used to widen and supplement the curricula of normal schools and to individualize teaching. Since many Australian schools are staffed by only one teacher, correspondence education is frequently needed to provide students with a wider range of subjects than would be possible given the background and abilities of the single teacher. In addition, correspondence education provides a way for prisoners at various state penitentiaries and pupils overseas to matriculate in the Australian school system.

Following the report by Kay Kinane for UNESCO in 1967, the author decided to focus on the Correspondence School in New South Wales.[7] This correspondence school has the largest enrollment, although the size has decreased since the Kinane article was written. Mr. Cole, headmaster of the New South Wales Correspondence School, estimated that in 1970 the total Correspondence School enrollment was slightly more than 6,000. This compares with approximately 7,000 students in 1961, and 6,800 students in 1966. Approximately 1,700 primary and 500 secondary students were taking correspondence work in their homes in 1970. Another 700 secondary pupils were working under the supervision of instructors in one-teacher schools. Their lessons were returned to the correspondence schools in Sydney for correction. Mr. Cole estimated that approximately 2,000 secondary students were taking selected correspondence work to supplement their high school course offerings. An estimated 400 prisoners in state penitentiaries were enrolled for correspondence education at all levels. (No estimates of the medical cases or itinerant pupils enrolled in the correspondence school were made.)

The largest decreases in the student population have been in the primary school, as more one-teacher central schools have been established. The New South Wales Correspondence School is concentrating on providing more courses in specialized subjects to high schools, and more offerings for adults in the technical colleges. Mr. Cole estimated that some 17,500 adults were taking course work at the correspondence school through technical colleges.

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[7] Kay Kinane. "Australia's Correspondence Schools with Supporting Broadcast Programmes and Radio University," New Educational Media in Action: Case Studies for Planners-I (Paris: UNESCO, 1967), pp. 170-203.

The information provided in the Kinane report (1967) is still substantively accurate. Therefore, a description of the available courses, and methods of reaching students and grading their work will be omitted. The size of the teaching staff has declined slightly since the Kinane report. The 1966 staff of 380 teachers had decreased to approximately 350 by 1970.

The correspondence school is both aware of the needs of the individual students and limited in its ability to provide an individualized and innovative course of instruction. Correspondence school teachers are familiar with each student's needs because the grading of lessons requires interaction on a one-to-one basis. However, actual course work mailed to the student is usually somewhat out-of-date relative to the course work of students in regular schools. This is because the writing of correspondence courses takes much time and thus can only be revised on a fairly long cyclical basis.

The correspondence teachers can make up for the lack of current and innovative course material in their correction of and additional comments on the students' returned work. Teachers are urged to encourage the work of all students, no matter what their capacity. There is no planned program of visits by the correspondence school teachers in Sydney to the students in their homes or small schools. Some correspondence students come to Sydney to meet their teachers and take part in arranged school programs at local schools. However, the main contact between the correspondence teachers and their pupils is through the lessons.

Correspondence students are required to remain in school in New South Wales until they are 15 years of age. If they have had the necessary course work they may travel to a central location and sit for the school certificate examination when they complete grade 10. They may also sit for the higher school certificate and the university entrance or the matriculation examinations at appropriate times and places, if they have met the course requirements.

Correspondence school students are eligible for bursary or commonwealth scholarships, although fewer funding resources are available as there are for students in regular schools. These scholarships cover all university fees. A few secondary scholarships are available from the Commonwealth of Australia; they are awarded on the basis of economic need, and performance on a special aptitude test.

In Mr. Cole's opinion, students who take all of their secondary level schoolwork in the correspondence school represent one of two types. Either they are not considered motivated or bright enough by their parents to be sent to a boarding school or hostel for their education, or they are ill or located overseas. Mr. Cole felt more students fell into the former than the latter category. Thus, he estimated that fewer correspondence students pass the school certificate examination than regular school students; but those who do pass (usually the overseas students), are conscientious and bright and receive very high examination marks.

Mr. Cole felt that students who were conscientious in their correspondence work were well prepared for university work, because secondary level correspondence courses: (1) required more preparation on the part of the teacher; (2) allowed for independent study on the part of the student, which developed skills necessary in the university; and (3) could be reviewed many times by the student since they were written rather than oral, as in a normal class situation.

There is a special secondary school course in the New South Wales Correspondence School for slower learners, which includes English, mathematics, social studies, science, art, book crafts and leather work, and crafts for girls. Course work in primary grades can be varied from 30 to 45 sets of work each school year. This arrangement makes it possible to: (1) hold slower learners at each grade level until their work is comparable with others in their grade; (2) accelerate brighter and older students; and (3) coordinate the pace of certain children so promotion of all students could be made toward the end of the school year. This third alternative becomes especially necessary as children reach the upper grades of primary school. Their transfer to the secondary school can be coordinated and scheduled for the beginning of the calendar year. Children in New South Wales may be enrolled in any school when they become 5 1/2 unless the schools have recessed for vacation. Therefore, it is necessary that students eventually be coordinated in their programs so they may qualify for the school certificate and matriculation examinations. This is done at the beginning of secondary school, which in our system would be the 7th grade.

The ABC And The Correspondence School

In 1933, a survey of correspondence school pupils in Victoria showed that at least 40% of the students had access to radio sets. Consequently, a proposal was made that a weekly ABC broadcast be sent to these correspondence students. The Victoria ABC affiliate allocated one period (30 minutes each day) for the program and invited the correspondence school headmaster to organize it. The broadcasting commission reserved the right to approve the schools' broadcaster. (This general proviso was adopted in all six states.)

In 1940 an examination of correspondence school broadcasts revealed that most programs were being directed toward secondary students, although those enrolled in the correspondence school were in the primary grades. A plan was developed to allocate two broadcasts to the correspondence school--one devoted to primary and the other to secondary classes. Also, at this time, each child enrolled in correspondence school was provided a free copy of the regular school broadcast booklet by ABC. In 1941, the chairman of ABC stated that approximately 1,500 schools located in small towns throughout the Australian countryside were listening to the regular school broadcasts.

In 1958, ABC held a conference to examine the existing radio services for correspondence school pupils. This conference concluded that:

1. radio was an effective medium for providing the guidance necessary to supervisors of correspondence pupils;

2. broadcasts provided a means of answering students' questions and of helping them with learning difficulties;

3. broadcasting contributed to the child's sense of belonging to a community; and

4. radio material should widen the horizons and enrich the experiences of the isolated correspondence school child.

In 1959, the number of radio broadcasts for correspondence school pupils in all states was increased to give a minimum of one session per day. New series were organized for both supervisors and students, and current programs were examined to see if they met the immediate needs of the children. Correspondence school teachers increased the number of special teaching notes and lesson sheets available to students for the broadcasts.

In 1961, the radio broadcasts significantly contributed to the work of the correspondence schools, by: (1) encouraging students to listen to the regular school broadcasts; (2) bringing correspondence school teachers to the broadcast studios to deal with learning difficulties and to answer specific questions; (3) presenting special programs to broaden the outlook and enrich the experiences of the students, especially in aspects of city life foreign to their backgrounds; (4) conducting sessions for supervisors suggesting ways to improve reading or speech habits and to encourage the slow learner; and (5) providing supervisors with plans for special projects or new school procedures.

Between 1961 and the present, the quality of the regular school broadcasts presented by ABC, and those presented by the correspondence school teachers became more and more divergent. While ABC felt the correspondence school broadcasters should be teachers, it became apparent that the instructors lacked the skills and training of other broadcasters on ABC educational radio programs. Partly because of this, and partly due to difficulties in coordinating broadcasts and correspondence lessons, the number of correspondence school programs was gradually decreased. Presently in New South Wales there are three broadcasts each week (on Monday, Tuesday and Wednesday mornings) while in Queensland and Victoria, only one correspondence school program is presented each week. To the best of the author's information, no educational television broadcasts for correspondence school students have been made.

The primary functions of the correspondence school broadcasts in New South Wales are to provide a sense of identification with a school community and to give instruction and help for the student's supervisor (his parent or governess). These broadcasts are not intended to substitute for teaching periods guided by the supervisor. Two programs each week are for the younger primary students and offer special instructions to supervisors who need help in moving from the role of parent (which most of the supervisors are) to that of teacher. The third program, for the upper primary school, is a school assembly broadcast which presents school activities; clubs; recognition of students' achievements; talks by the Assistant Principal for Primary Education; and discussions of special school weeks, such as education week and the program visits to Sydney.

The ABC in New South Wales provides not only air time, but also produces programs, dramatic interpretations of stories, singing lessons or music for singing, and special speakers for correspondence school broadcasts at the request of the school. (Using songsheets from ABC saves the correspondence school the copyright fee.)

Four correspondence school teachers in Sydney are involved in writing and presenting the correspondence school broadcasts for New South Wales each week. Information sheets are sent to the correspondence students at their request for every broadcast. The scripts for these programs must be written approximately six weeks in advance to allow

ABC time to review and record them at least two weeks before the broadcast date. This means, of course, that no discussions of current affairs are possible in the correspondence school broadcast.

Correspondence school broadcasters feel their programs are more personal than the regular ABC broadcasts, as they know and use the names of many of their students. They help the supervisors by providing a different teacher figure for the student, giving a means of comparing the pupil studying at home with those in the Sydney area schools who participate in correspondence school broadcasts, and suggesting teaching ideas. Supervisors are introduced to such techinques as, "show and tell," picture chats using pictures provided on the school broadcast sheet, dramatization of stories, "look and draw," "what is missing," and various recreational activities to promote reading readiness.

Correspondence teachers emphasize the importance of reading, and spend much time acquainting supervisors with the techniques of teaching this skill. They encourage supervisors to give students incentives to read well, and later, to write. The fact that students at various levels of reading ability take part in correspondence school broadcasts gives the supervisors a means of judging their pupils' progress. This strategy is considered useful because parent-supervisors tend to be overly critical of their children.

A correspondence school broadcaster makes a point of vividly describing school to children who may not be able to come to Sydney on special visits or for education week so that they might develop a visual image of school. The sheets sent out for school broadcasts frequently contain suggestions for program follow-up activities, as the school broadcasters feel that younger children like to receive assignments from their teachers. The school broadcasters comment on the sheets the students mail to them, and return the comments with the next group of correspondence lessons.

The correspondence school broadcasters in New South Wales do not see the lessons students turn in to their correspondence teachers. Although looking at these assignments might be helpful in broadcasts, broadcasters do not have time to study them, and therefore rely on the teachers for suggestions on planning programs on specific learning difficulties, and assisting specific students. Correspondence broadcasters cite ABC's regular school programs appropriate to the children and send them the ABC program booklets when these are available.

There are no correspondence school broadcasts in New South Wales to secondary school pupils. The broadcasters feel there are too few students to warrant such broadcasts.

No evaluation has been made of the correspondence school broadcasts in New South Wales either in terms of their impact or the size of their audience. One correspondence school broadcaster indicated that approximately 700 broadcast sheets are requested for an average program. This does not necessarily represent the entire listening audience, however, as those who request sheets may or may not listen, while others who do not request sheets may tune in the broadcast.

Cost Of The Program

The author was unable to obtain any more details on the costs of correspondence school or School of the Air broadcasts than those presented in the Kinane Report (1967). At that time (1965), Kinane reported that the State of Victoria estimated its correspondence costs at $610.96 per student per year. (All costs are given in U.S. dollars.) Per pupil costs in New South Wales (which had ten times Victoria's enrollment) were estimated at $310.24 per student per year. The current costs at the School of the Air vary according to the overhead costs of correspondence education in the state and the number of students involved. For a School of the Air in Western Australia with 60 pupils, the total annual cost was estimated at $32,400, with $24,000 allocated to annual operating costs and $8,400 to depreciation, maintenance, and interest. On a per pupil basis, the costs of such a School of the Air would be $540 per year per student. There is no reason to suppose that these costs have changed substantially although they have probably increased slightly due to the general inflation of the last three to four years. Relative costs of both correspondence school and School of the Air broadcasts remain approximately the same as reported in the Kinane study.

XVII. SCHOOL OF THE AIR

Background

Throughout Australia's outback, the Royal Flying Doctor Service (FDS) has established bases to maintain contact with families at isolated homesteads (or stations). Two-way radios located at the bases and the homesteads make it possible for families to communicate with the Flying Doctor base and medical personnel. In addition to medical services, the radios are used for postal traffic (telegrams) and neighborly chats each day. In 1951, Adelaide Meithke, a South Australian educator, suggested that the radios could be used for educational purposes. The first School of the Air was established in that year at the Flying Doctor base in Alice Springs, Northern Territory which is virtually in the center of the Australian continent.

Today there are 12 Schools of the Air throughout Australia: five in Western Australia, two in the Northern Territory, one in New South Wales, one in Southern Australia, and three in Queensland.

Typically, a school is established when a group of mothers in the outback requests the correspondence school of their state to establish one. Correspondence school representatives then investigate the Flying Doctor Service and the educational needs of the area, and if they feel the number of students and the Service warrant a School of the Air, they solicit approval of the necessary officials. Establishment of the school must also be approved by the federal Minister of Education. Teachers are assigned to the School of the Air; a studio-classroom is set up at the base, a nearby school or in a separate building; and students taking correspondence lessons in the area are invited to enroll. The amount of air time given to the School of the Air and the scheduling of these programs are determined by the Flying Doctor Service at the transmitter.

Equipment

The transmitters are maintained by the Flying Doctor Service, with the education department of the state paying an annual rental for their use. The transceivers used most often at the homesteads by students are a Traeger Type 59SA, developed especially for the School of the Air broadcasts. Children can use them with ease, since they have only a volume/on-off switch and a band switch. The sets can only operate in one direction, i.e., students cannot talk and listen simultaneously. The transceivers are battery powered and range from three to 25 watts. They cost between $250 and $550. The more expensive receivers are purchased for general use and to maintain contact with the Flying Doctor Service and are usually already in the homes prior to the formation of the School of the Air. (The state Department of Education pays the annual license fee required for each of these radio transceiver sets.)

Those families living close enough to a major community to have phone service can rent a transceiver for approximately $25 a year, and use it only for the School of the Air broadcasts. Any calls to the Flying Doctor Service are made by telephone. This is done because medical calls to the flying doctors have precedence over School of the Air broadcasts if they occur at the same time. When an emergency call is made over the transceiver during a School of the Air broadcast, students are unable to hear the school program.

In some states families who do not have the means to buy or rent a transceiver can get one on loan through a charitable organization. (Most families can afford their own transceivers, but some ranch managers cannot.) Two or three months may pass before the transceiver is placed in the home.

In 1971 all of the Flying Doctor Services will switch from frequencies they now use to a side-band operation; this will require families in the outback to modify or replace their transceivers. Some states' education departments are considering setting up their own transmitters for educational use only at this time. A minimum of $25,000 a year per transmitter would be required. Even if the FDS transmitters continue to be used, the switch to side-band should increase the number of frequencies available and hence the possibility of more air time for the Schools of the Air.

The educational facilities of the different Schools of the Air vary. In most cases they are located at the transmitter where they share equipment with the Flying Doctor Service. In other areas a school classroom in the community where the transmitter is located is used. Equipment for transmitting is paid for by the state Department of Education and linked by land-line to the Flying Doctor Service transmitter. At Broken Hill, New South Wales and Port Hedlund, Western Australia, separate classroom-studio buildings were built by the departments of education at costs of approximately $25,000 to $30,000.

Transmission from the Flying Doctor Service is much stronger than the return transmission from the families and students in the outback. Thus, students are usually able to receive the broadcasts, but under adverse weather conditions the School of the Air teachers may not be able to understand or hear the students' return transmissions. Under these circumstances, teacher-broadcasters may ask children who hear messages from pupils located far away to relay them. Children who cannot be heard, realize they will be able to communicate with the teacher in the near future.

Physical Facilities Of The Broken Hill School Of The Air

For the purposes of this case study the School of the Air at Broken Hill, New South Wales was visited. Reference to this school will be made throughout the paper. In 1970, the school had enrolled 90 students in seven grades of the New South Wales Correspondence School. It broadcasts from 10:00 to 11:00 A.M. and from 1:30 to 3:00 P.M. each weekday and has a staff of three teachers. It was established in 1956 with an enrollment of 85 students and has had as many as 140 students and four teachers (1966-67).

This school differs from other Schools of the Air in that it broadcasts to students in three states: New South Wales, Southern Australia and Queensland. Because correspondence lessons vary to some extent from state to state, the School of the Air at Broken Hill cannot follow correspondence work as closely as schools which broadcast only to students in one state. (In Western Australia especially, broadcasts are closely linked to the correspondence lessons.) In none of the states, however, are the School of the Air broadcasts considered to be the essential teaching medium; they are designed to supplement and enrich correspondence school lessons.

The School of the Air building at Broken Hill contains three large rooms: a control room with two switching panels, three tape recorders, a microphone and the principal's office; a classroom-broadcast studio with 70 seats where visitors watch the broadcasts, a piano, two microphones, blackboard with the school song written on it, and numerous maps and artifacts sent to the school by the children; and a third room housing the school library which also doubles as a meeting room.

The Flying Doctor transmitter at Broken Hill is rated at 300 watts and has a range of approximately 500 miles; it serves children living in an area encompassing a half million square miles.

Technicians from the ABC station in Sydney inspect the equipment approximately once a year, and a technician at the Broken Hill airport is on call should there be problems in transmission. Teachers at Broken Hill cannot recall a major equipment breakdown in the school's history.

The Faculty Of Schools Of The Air

No special training or selection test is given for teachers assigned by departments of education to the Schools of the Air. All teachers in the Australian school system are required to teach for two or three years at a rural school. Teaching at a School of the Air is one way of meeting this requirement. Most teachers in rural schools are young; many are recent graduates of teachers' colleges. Most School of the Air teachers do not stay after fulfilling the minimum one-to two-year requirements, as they prefer to return to the cities and take advantage of promotion opportunities there.

Many School of the Air teachers have had some correspondence teaching experience. This was not true for the three instructors at Broken Hill. All three were in their middle to late 20's. None had applied for the Broken Hill assignment, and all lacked experience in broadcasting and in living in the outback. However, all were reasonably happy after an initial period of adjustment. The two female teachers were unmarried when they came to Broken Hill, which is typical of teachers in the Schools of the Air. Both of them married in Broken Hill and plan to remain one to four years beyond their current assignments.

School of the Air teachers are not given special teacher training nor do they receive instruction in broadcasting. The three teachers at Broken Hill began to broadcast shortly after their arrival at the School of the Air. Although it was difficult at first, they quickly learned the necessary techniques and now feel quite competent as school broadcasters.

All three teachers can operate the control equipment. They use tape recorders--some of which are on loan from ABC--for transmitting music and sound effects, and for recording broadcasts featuring visitors, such as members of the Southern Australia Symphony Orchestra. The recorded programs can be rebroadcast at later dates.

A school inspector evaluates the performance of School of the Air teachers as he would teachers in the normal school situation. These evaluations are critical to promotion, but the criteria for performance of School of the Air instructors are somewhat unclear. The Department of Education in Western Australia may assist School of the Air instructors who fall behind in marking correspondence lessons by assigning a correspondence teacher to aid them. Other than this, the Education Department allows teachers on Schools of the Air great freedom, unless strong complaints about an instructor's performance are registered.

Broadcast Objectives And Content

School of the Air programs are designed to supplement and enrich the formal lessons presented by correspondence schools. For this reason, teachers of Schools of the Air have more flexibility in preparing their lessons than do teachers in normal schools. This is especially true at Broken Hill where teachers must develop their own curricula for a three-state area. Correspondence lessons are sometimes reviewed on the radio, but most emphasis is placed on enrichment programs.

School of the Air instructors do not often engage in direct teaching. However, they may occasionally assist students with a difficult correspondence lesson, at the request of a correspondence teacher. Even in Western Australia where the work of the correspondence school is most closely related to the broadcasts, the principal, Mr. Peterson, indicated that the daily half-hour broadcasts to the different grade groups primarily serve to embellish correspondence lessons. (Poetry, drama, and social studies plus review of difficult correspondence lessons constituted the majority of these programs.)

Teachers at the Sydney Correspondence School and the Broken Hill School of the Air agreed that the most important goals of the School of the Air were to develop self-confidence, self-assurance, and a spirit of school community in children who are otherwise shy, isolated and limited in their horizons. The school flag, badge, song and motto, plus a picnic-sport day and a Christmas party program at Broken Hill foster a sense of school spirit. Each year a boy and a girl captain and vice-captain for the school are elected. These children represent the school in club activities and thank guests who participate in broadcasts. The past principal of the Broken Hill School of the Air felt that his students identified more strongly with the School of the Air than with their correspondence school, which suggests that the broadcasts are achieving one of their major goals.

The School of the Air also strives to help correspondence students adjust to the boarding school or hostel they will attend after the sixth grade. The past principal at Broken Hill reported that the headmasters of these boarding schools see little difference between children educated by correspondence work and School of the Air, and those who come from normal school situations. The correspondence-School of the Air pupils may be more shy and socially awkward initially, but these problems usually are overcome quickly.

Most School of the Air broadcasts are programmed for infant school and lower primary grades, although some are directed to students as far along as the sixth grade. There are no broadcasts for secondary school correspondence students. The correspondence schools send lessons to the students and, except in Western Australia, grade these assignments. In Western Australia the lessons may be mailed directly from the School of the Air when this is more convenient, and teachers there mark them.

Written scripts are not used at Broken Hill, although plays, poems, songs, and other printed materials frequently are. Most programs are planned six weeks to a term in advance so the necessary ancillary material coordinated with the broadcast can be mailed to the pupils. The broadcasts are directed to a middle-class student audience. (This was particularly evident in a broadcast on manners for second and third grade students observed by the author. Children were questioned about being helpful to other children and adults and about proper social behavior.) Subject areas broadcast over the School of the Air at Broken Hill include: listening to reading (for the first three grades); singing and music; playing of recorders; poem and verse speaking; drama, including oral expression, rhythm, and presentation of plays; weather observation; speech training and language; composition, including joint compositions by a number of students; picture talks; mathematics; and art. The mathematics lessons are used to build speed in mental arithmetic. Speech training lessons involve listening to the reading of literature and poetry and repeating it for the teacher, who then makes corrections.

When visitors with backgrounds or talents that would be of interest to the students visit the studio, they are asked to discuss their activities or perform and to answer students' questions over the air. This author was featured on a morning assembly and three members of the Southern Australian Symphony Orchestra appeared on the afternoon of the same day.

Techniques Of Educational Broadcasting

Students at Broken Hill and other Schools of the Air are divided by the teaching staff into classes so all children may have an opportunity to participate in the broadcasts for their age group. The ideal class size is 20 or less. At Broken Hill, students are divided into the six grades of the New South Wales system; almost half of them are in the first two grades or in the infants' school which preceeds these.

The broadcasting teacher sits at the head of the classroom-studio (or at the piano for music programs), while another teacher operates the control panel.[8] Visitors to the school are seated in the classroom. The same teacher always broadcasts to a given class so the students can "identify" their teacher and not be confused by different voices. Each class receives two or three broadcasts each week. The teachers dramatize poems and readings and use sound effects when appropriate.

Student involvement in the broadcasts is emphasized, and teachers try to give all children listening an opportunity to speak. Pupils are called upon to answer questions, to sing, or to make reports. At Broken Hill an effort is made to give all students equal air time during the school year, as they are all eager to participate. Younger students especially enjoy telling their news and taking part in the broadcasts.

Teachers try to build self-confidence in students by suiting the task to their ability and personality. Shyer or less capable students are given easier assignments during the broadcasts. Since the children may work ahead in their correspondence lessons or may be held back (usually by their supervisors), broadcasters do not embarrass pupils by mentioning grade placement. Students are encouraged to answer questions and perform on the air, and instructors are always tactful in correcting errors. If they give inaccurate information, the teacher will supply the right answer. Distinction is made between the student's motivation and the actual performance, and they are given credit for "a good try." Parents, guardians, or governesses are asked not to prompt students and if the teacher-broadcaster feels they have, the child is not told that he has done well or made a good effort but merely thanked for his participation. Supervisors of students, especially younger pupils, often sit at the transceiver during the broadcasts. Although they are asked not to take part in programs directed to the students, supervisors can use the broadcast to report lesson problems and other difficulties to the instructor.

When children first participate in the School of the Air, they may be reluctant to talk on the radio. This may be especially true of pupils who have not seen other members of the family use the transceiver. In these situations, teachers ask simple questions, give encouragement, and award much praise.

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[8] In Schools of the Air located at Flying Doctor Service transmitters, the control panel is run by a base engineer. If the teacher must both broadcast and run the controls, other activities such as playing an instrument or using sound effects are curtailed.

More confident children can express themselves frequently during broadcasts like the school assembly, when teachers direct questions to the entire student group. Even here, however, teachers select from the several students who volunteer to answer. In the broadcasts observed by the author at Broken Hill, there was a good balance between questions asked of all students and calling on particular students.

Not all the dialogue is between pupil and teacher. School dramas, joint compositions, and occasional school debates give children the opportunity of talking directly to or in conjunction with each other. These broadcasts foster a feeling of a school community and give the children a chance to meet others who are working on similar projects. Before the School of the Air began, many children in the outback (especially those without brothers or sisters) were unaware that other children were also working on correspondence lessons. Through the School of the Air, these children have become acquainted. The principal of Broken Hill feels most of her students know each other well enough to enjoy the school sport day or Christmas party, without feeling shy and self-conscious.

School Of The Air Students And Supervisors

Because enrollment in School of the Air is voluntary and parental support is needed to register the children, in some cases to buy a transceiver, and to encourage student participation in the broadcasts, the most motivated and informed families tend to be enrolled. The Broken Hill faculty felt the majority of the students involved in their programs came from more affluent families with parents (especially fathers) who were comparatively well-educated and valued education for their children. The author's observations of a family and group of children who were visiting their School of the Air at Broken Hill substantiated this view. Their appearance and behavior suggested a middle-class orientation toward education, high achievement, and the social graces. Middle-class families have sufficient financial and educational resources to enable their children to work on correspondence lessons, do chores around the home, and listen to regular ABC and School of the Air programs.

The past principal at Broken Hill commented that the children who most need the help offered by School of the Air cannot be reached. Children whose parents are relatively uneducated may not realize the values of the broadcasts or may not be aware of School of the Air. In many families fathers are familiar with the school, but assume their children, especially the boys, will pursue occupations similar to their own. The fathers feel School of the Air programs are irrelevant to boys who want to engage in ranching and other activities in the outback. Work-oriented fathers seldom pressure their children to remain in the voluntary School of the Air.

In many ways, the effectiveness of the correspondence lessons and School of the Air broadcasts depends upon the student's supervisor. The supervisor may be a parent (usually the mother), an older brother or sister, or a hired governess. If the supervisor is willing to tell the teacher about problems with the child and his lessons, the broadcasts can benefit both the supervisor and the pupil. However, some parents are reluctant to admit difficulties, and may eventually send the children to a boarding school or hostel rather than discuss problems publicly over the air.

Approximately one out of two or three families with children enrolled in School of the Air have hired governesses. They are usually girls in their late teens to early twenties from Australia's coastal cities. Governesses apply for positions through School of the Air or livestock representatives who know ranchers in the outback.

The Broken Hill School of the Air puts families in touch with potential governesses, but does not attempt to match employers and employees. Placing governesses has proved to be a sensitive, hazardous process. When applications for governesses are received, announcements are made on the school assembly broadcast. Families and governesses must contact each other to make final arrangements. Governesses stay an average of one to two years with the families outback. These girls usually have had little or no job training, and often come to the outback with romantic ideas about ranch life and cowboys. Many of them are not prepared for the isolation and total dependence on the family. Problems often develop in the enployee-employer relationship, as some parents in the outback do not know how to supervise domestic help.

Many governesses enjoy their work and may stay with a family for five or six years. Older women who have been trained in this occupation or nursing, and who are interested in teaching are usually successful governesses. Many families who were interviewed about governesses felt the failures and misfits outnumbered the successful relationships. Obviously, untrained, unhappy governesses will probably not be effective supervisors of a child's education, for a child's attitude toward learning is strongly influenced by the attitudes of the adults around him.

Informants felt mothers are usually successful supervisors. They usually have a greater interest in the child's education and feel freer to apply discipline. However, if the mother does not persist with the lessons or becomes frustrated because she does not feel the child is learning fast enough, the child frequently turns to the father who may not be as sympathetic to the value of education.

Interested parents can expose their children to additional educational opportunities. Children and parents can participate in sports day and the Christmas program at Broken Hill, if they have the time and money to travel to the school. (Similar arrangements are available in other states at camp schools which last as long as 14 days. Parents making a trip to town can leave their children in the camp school for the day to give them an opportunity to take part in a normal school program. Two- to three-week training programs for supervisors held at the end of the school year are available in the capital cities of Queensland and Western Australia.)

Evaluation Of Broadcasts

School of the Air programs have not been formally evaluated. Both the past principal and the present principal at Broken Hill feel the most effective way to evaluate the broadcasts would be to visit the homes of the students. However, only two Schools of the Air (those in the Northern Territory) provide funds for School of the Air teachers to travel to the outback to meet their students. A few students living near the broadcast station invite the teachers to visit, at the instructor's expense. The present principal estimates that a $1,000 subsidy from the Department of Education in New South Wales would be necessary for her to visit all 90 students. She feels such visits are needed to ascertain the conditions under which the children work on their lessons and their feelings about the broadcasts. She estimated that knowledge obtained about pupils through two years of broadcasting could have been learned in two weeks of travel.

Questionnaires are not considered useful for evaluation of School of the Air programs. Educators feel the forms confuse supervisors and give the impression that teachers are incompetent if they must rely on others for information. Both Broken Hill principals discounted the value of letters from parents as a sound basis for judging programs; many letters are useful, but an equal number are confusing. Many parents only praise the work of School of the Air, and when criticisms are made, parents do not report the causes of their dissatisfaction. Some parents request more formal school lessons while others want more social activities. Teachers have difficulty satisfying all the audience requests.

All of the educators and broadcasters interviewed by the author felt that ideally, the correspondence lessons should be closely coordinated with School of the Air broadcasts. However, except in Western Australia, there is not a close link between the work of the correspondence school in the capital city and Schools of the Air in the outback. Supervisors usually write directly to correspondence schools about the children's lesson problems, thus School of the Air teachers are seldom aware of student difficulties. Occasionally a broadcaster-teacher will inform the correspondence school about a School of the Air student who reads poorly or has a speech impediment. Even more rarely, the correspondence school at Sydney will ask for specific information about a student or will suggest that a Broken Hill School of the Air broadcast concentrate on a complex correspondence assignment.

The Western Australian system was felt to be the most adequate because school broadcasters grade correspondence lessons and return them quickly. This heightens the children's interest in the results. Also, teachers can broadcast information and provide help with items they identified as difficult for given students. Both the principal and ex-principal at Broken Hill felt they should be more familiar with the children's work so they could broadcast useful information and suggestions.

CASE STUDY

INSTRUCTIONAL TELEVISION IN ISRAEL

BY

NAOMI E. KIES

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I. INTRODUCTION

A. Statement of Purpose

This is a report of Instructional Television in Israel (hereafter ITV), written with the hope that understanding its history, operations, goals, and achievements may aid in planning for instructional television in the United States. The report is the culmination of five months of interviews, observations, and study of published and unpublished materials in Israel during the period from October, 1969 to February, 1970, the first half of the school year.

B. Description of the ITV System

Israeli ITV is based in a specially designed television center in Ramat Aviv, a northern suburb of Tel Aviv, the country's largest metropolitan area, adjacent to Tel Aviv University. At the center, programs are produced and transmitted as far as the signal permits, from Kiryat Shmona in the north to Be'er Sheva in the south (see map) and, in 1969-70, were used in approximately 1,000 of the State's 1,400 schools.

With the exception of two series of "enrichment programs" virtually all telecasts are integrally related to the school curriculum and teachers using television are given special training, directed from the center to make maximal effective use of the medium. Teachers' guides and pupils' workbooks are specially prepared for each series. An evaluation unit regularly provides "feedback" to production teams.

C. The Effectivenss of ITV

The emphasis on integration of telecast and curriculum and the insistence on teacher training are two features credited with the system's overall success. Available data suggest though inconclusively, that the introduction of ITV has been accompanied by increased academic achievement as measured by special achievement tests, ratings on standard national examinations, and teachers' observations and reports. The programs are considered to be of high quality and several individual telecasts have won international prizes.

However, the original view that the introduction of ITV in Israel would substantially help solve specific educational problems, particularly among the underprivileged has been, if not altogether dropped for the time being, considerably modified and replaced by a more general goal of improving achievement levels throughout the population. As we will see below, this development is claimed to be less the result of a deliberate shift in policy and priorities than of the difficultues encountered in producing for a select audience. But political pressures also operated to encourage maximal utilization of the facilities in extensive coverage of the country. It appears that the hope and claim that ITV would help solve problems of education of the underprivileged was politically necessary to get initial approval and support for ITV; but that once established in its own right, the justification was no longer necessary.

D. The Educational System

1. Administrative Control. Israel's educational system is highly centralized both in terms of administration and curriculum. The state supports two parallel systems of Hebrew education--one secular and one in which Jewish religious subjects are given greater emphasis--and a network of Arabic schools serving most of the non-Jewish population. In addition, a system of "independent" schools run by the extreme religious political party, Agudat Yisrael, is subsidized in proportion to the number of its pupils. Finally, privately-run schools, mostly affiliated with missions or churches, may or may not be recognized, according to whether their curriculum conforms to the standards set by the Ministry of Education.

Administration and financial support are the responsibility of local authorities which distribute funds allocated by the central government, except in those areas where personnel and financial difficulties led the Ministry of Education to take direct responsibility for maintaining local school systems.

2. Innovation in Education. Curricula are set by the Ministry of Education and deviation and innovation, though possible, are limited by the need to prepare pupils for national standard examinations at the end of primary and secondary school. Even at the secondary level where historical differences between schools of different political trends (which existed until 1953) and individual school traditions affect the methods and content of education, the core curriculum is everywhere identical. The distribution of classroom hours per subject is virtually uniform. This centralization means that while, innovation by a school or an individual teacher is discouraged and effectively limited, a change in curriculum at the top can directly lead to changes throughout the system conveyed by the network of inspectors and supervisors. As will be shown below, this is particularly significant in assessing the significance of ITV in the educational system.

3. Sensitivity to Special Groups. However, despite the central administration and standard curriculum, the tremendous variation within the student population has defied any attempts at achieving uniform levels of achievement through identical teaching methods. Although immigration rates have slowed considerably since the years when refugee camps in Europe and Cyprus and neighboring countries virtually emptied their Jewish populations into the new state, Israeli society remains heterogeneous with regard to language, culture, and traditions. Though the overwhelming majority of the school population is now Israeli-born, for many Hebrew is a second language and the entire educational experience is basically strange.

The sub-group considered most problematic by the educational system consists of children whose families come from the Middle East and North Africa and who come primarily from the lower socio-economic strata of society. They come from traditional or, at best, transitional cultures and adjustment to Israel has demanded of them rapid accommodation to a modern society where the dominant values are those of the western industrial world. This "other" or "second" Israel is often separated from the older, more European, population by geography as well. Many were settled in ethnically honogeneous agricultural cooperatives and development towns far from the main centers of population or in new housing projects which often became "instant slums" in the outlying parts of the larger cities. Planning followed the dictates of political and security issues more than of social and economic needs. The early abandoning of a "melting pot" philosophy, however, sometimes led to interesting social and ecological experiments, such as settling different ethnic groups in homogeneous communities around a central town.

For the educational system this meant that schools or local systems varied tremendously in the level of the pupils and in the quality of teaching, as well as in the physical facilities. Schools in certain neighborhoods or towns, were assumed to provide inadequate preparation for secondary school, and in some cases even failed in their most basic responsibilities. The socio-economic level of schools and often communities was measured in terms of the average grade on the "seker," the statewide examination given all children at the end of primary school, and by the proportion of qualified or unqualified teachers on the school staff.

When "ingathering of the exiles" did not lead to automatic integration, politicians and social scientists alike looked to education as the field for achieving the desired goal. With the exception of programs of adult education and pre- or post-army training, the emphasis was on primary and nursery schools. Remedies, however, were administrative and structural rather than educational. Schools in development areas were directly administered, financially maintained by the Ministry of Education rather than the local authorities. Children from Eastern backgrounds were given extra points on the "seker" in order to increase their proportion among those qualified for scholarships and admitted to secondary schools. However, this artificial improvement of the indicators of educational attainment frequently resulted in increased drop-out rates in secondary schools as ill-prepared children failed to compete with their peers from different backgrounds and, more specifically, from different primary schools.

Another approach focused on social aspects of the problem, seeking to reduce if not eliminate "negative" family influences. A "long school day" was instituted in sub-standard neighborhoods and development towns to provide an atmosphere more conducive to learning lessons and preparation than over-crowded home conditions. The "long school year" added an extra month of classes to allow teachers more time to achieve standards comparable with those in "better" areas. Government-sponsored pre-school education, later introduced on a larger scale in the American "headstart" programs was first initiated in Israel where the rate of nursery attendance is among the highest in the world and where, in disadvantaged areas, attendance is compulsory and free. Even total "child-removal" has been attempted with some apparent success as thousands of children from large and poor, often problem-ridden families, have been educated within the schools of the agricultural collectives, kibbutzim. On a much smaller scale, children from similarly neglected backgrounds who show promise, have been sent to special "dormitory" institutions. There, they attend prestige high schools with private individualized instruction to help bridge the gap between them and their more advantaged schoolmates.

But all these are basically administrative and structural changes and affected neither curriculum content nor teaching methods. Changes within the schools have been similarly limited: homogeneous grouping in arithmetic, English, and Hebrew language instruction or reduction of classroom size. An intensive evaluative study of the educational system by a special parliamentary committee led, in 1966, to legislation of a far-reaching set of reforms. After months of debate and opposition, particularly vehement from the strong teachers union (teachers' strikes have been a frequent occurrence in Israel) parliament passed into law the basic recommendations of the committee, the "Reform."

Since the significance and success of instructional television have been closely linked to the Reform in fact, if not in theory and planning, we will briefly summarize those aspects of the Reform which are essential to our later discussion:

a. A gradual extension of a free compulsory education through secondary school.

b. Structural re-organization of the school system into three, rather than two, levels: primary grades 1-6, a new intermediate level for grades 7-9, secondary schools, grades 10-12.

c. Extensive curriculum reform, particularly for the new intermediate level, to be planned and executed by special curriculum units linked to the Ministry of Education and utilizing expertise and experience of local university faculties.

d. An attempt to close the social and educational gap between sectors of the population by re-districting primary school areas to achieve gradual integration of the school population and at the same time make available the best facilities and teachers to those pupils most lacking them.

The Reform is being introduced gradually, because of teacher opposition and budgetary difficulties and, thus far has only affected a small percentage of communities.

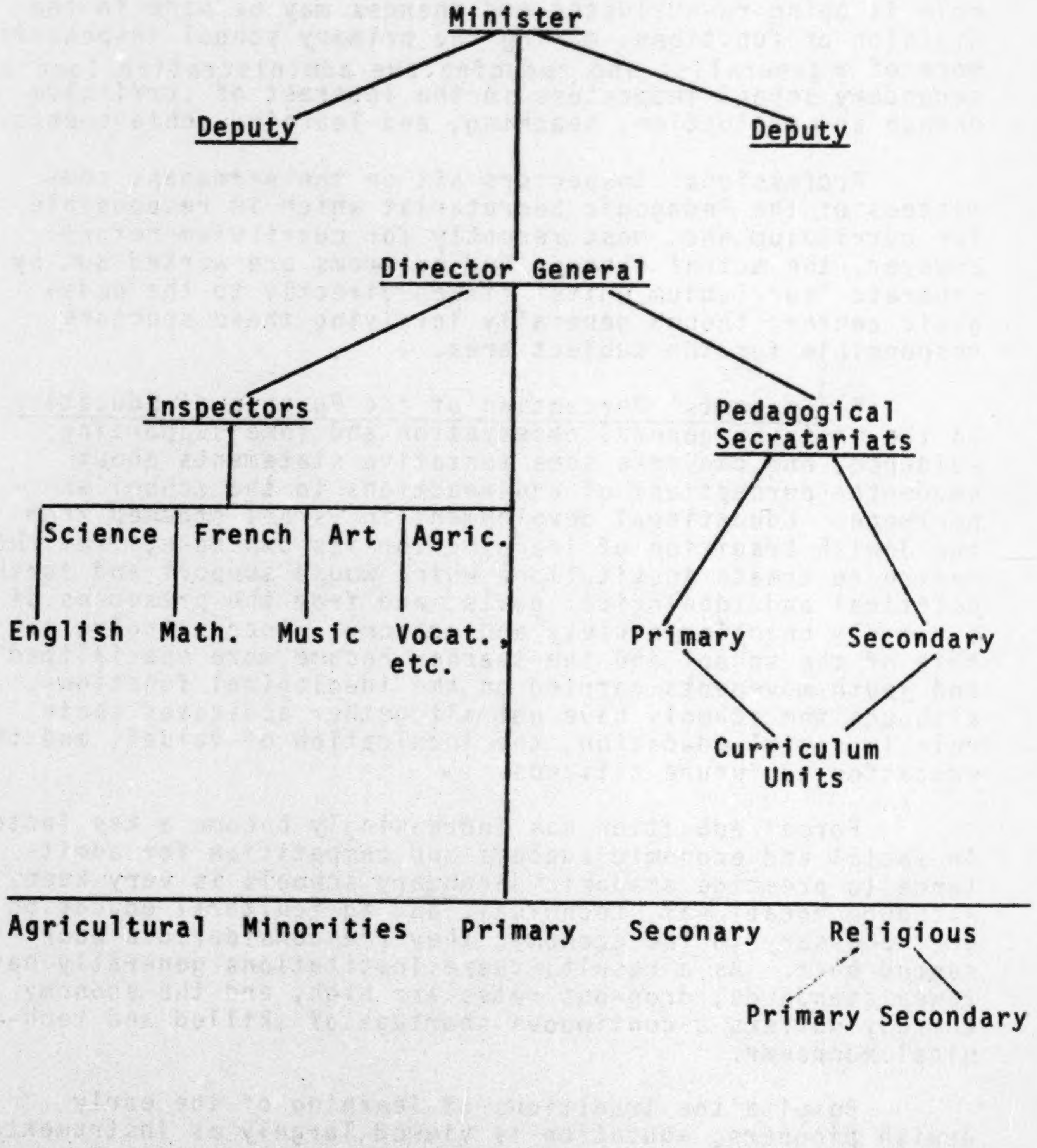
Despite these attempts at remedies and an awareness of the different needs of "cultural sub-groups," the schools have been basically unresponsive; perhaps because of the fear of perpetuating these differences by dealing with them directly. Thus, there has never been any consideration of the possibility of accommodating early teaching to the problem of the child for whom Hebrew is not spoken at home, a problem which certainly multiplies the known difficulties in conceptualization and language use of children from "underprivileged backgrounds." Secondly, while there is some sensitivity to cultural differences and a wariness of imposing norms and values, resulting from unfortunate incidents during the early years of statehood, little is understood about the suitability of a curriculum patterned after British and European models to Israel's heterogeneous and increasingly non-Western population. With the exception of those secondary schools in which an "Oriental trend" is offered, for example, children learn little at any level about the history and cultures of the Middle East while learning a great deal about Western or European history and civilization. Even Jewish history tends to emphasize the European Jews because of their accomplishments and, more important, their relevance to the re-birth of Jewish nationalism through the Zionist movement.

In other respects the system has been sensitive to cultural and social diversity--allowing the religious and the ultra-religious Jews a degree of autonomy over their institutions and providing a separate school system for Arabs. In Arab schools, Hebrew is taught from the beginning but Arabic is the language of instruction, and more time is devoted to Arabic history, culture and religion. There is, however, a shortage of qualified teachers and adequate facilities among the Arab schools exceeding anything known among the Jewish population. Although the large proportion of non-Jews live in the villages of the "little triangle" and the Galilee, their schools do not benefit from the policy of government subsidization since their communities are neither immigrant villages nor development towns. At the same time tax collection is laggard and funds necessary to maintain, if not improve, the schools are unavailable.

4. Status Relationships Within the School System. Israel's educational system, like other aspects of Israeli society shows the simultaneous and occasionally contradictory influence of an ideological commitment to social equality, and a traditional respect for status and authority brought by European immigrants and later from the countries of the Middle East and North Africa, that is further complicated by increasing demands for suiting education to the needs of the economy. At the lowest level it is equality which dominates. Children refer to their teacher by their first names (and may not even know their family names), especially in primary school, and since teachers are often involved in extra-curricular activities such as the hikes and periods of national service which are a part of the Israeli child's education, many come to be known in roles not strictly related to the classroom. But the general role of the teacher as friend, counselor, and embodiment of Zionist fulfillment has gradually changed and with it has come a decline of his status. Youth movement leaders and special "counselor-teachers" carried on the more social functions related to ideals and ideology and the teacher became more confined to the classroom and his subject.

However, within the educational system, as in most other Israeli bureaucratic organizations, hierarchy is strongly centralized and authority delineated (see Figure 1). An extensive inspection network with responsibility for school districts and for particular subjects is supposed to check on levels of teaching and achievement, execute changes in curriculum, and provide feedback to the higher, policy-making levels within the Ministry. Parallel inspection systems exist for secular, religious, and Arab state schools. At the primary level there are area inspectors and, in addition, "professional" inspectors for specific subjects. At the high school level, a network of district inspectors is complemented by statewide professional inspectors who

Figure 1. Ministry of Education and Culture: Table of Organization[1]


Minister
Deputy
Deputy
Director General
Inspectors
Pedagogical Secratariats
Science
French
Art
Agric.
English
Math.
Music
Vocat., etc.
Primary
Secondary
Curriculum Units
Agricultural
Minorities
Primary
Seconary
Religious
Primary
Secondary

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[1] This represents only the general pattern of relationships for the purposes of this report and does not represent the complete structure of the Ministry which is currently undergoing reorganization.

share administrative responsibilities. The basic link between teachers and the Ministry is through the inspectors, who enforce centralization and a standardization of the system as well as its segmented nature--particularly at the secondary school level. Inspectors now have both administrative and pedagogic responsibilities--through their role is being re-evaluated and changes may be made in the division of functions, making the primary school inspectors more of a generalist and reducing the administrative load on secondary school inspectors in the interest of curriculum change and evaluation, teaching, and learning achievements.

Professional inspectors sit on the permanent committees of the Pedagogic Secretariat which is responsible for curriculum and, most recently for curriculum reform. However, the actual changes and programs are worked out by separate "curriculum units" linked directly to the pedagogic center, though generally involving these spectors responsible for the subject area.

5. Students' Perception of the Purpose of Education. On the basis of general observation and some supporting evidence, one can make some tentative statements about students' perceptions of and reactions to the school experience. Educational development in Israel stemmed from the Jewish tradition of learning for its own sake, from the desire to create institutions which would support and further political and ideological goals, and from the pressures of a rapidly changing society and economy. Increasingly, the role of the school and the teacher became more specialized and youth movements carried on the ideological functions, although the schools have not altogether abdicated their role in social education, the inculcation of values, and the education of future citizens.

Formal education has increasingly become a key factor in social and economic success and competition for admittance to prestige academic secondary schools is very keen. Although vocational, technical, and agricultural education are necessary to the economy, they are considered a poor second best. As a result, these institutions generally have lower standards, drop-out rates are high, and the economy thereby suffers a continuous shortage of skilled and technical manpower.

Despite the traditions of learning of the early Jewish pioneers, education is viewed largely as instrumentally useful, whether in academic or non-academic institutions. Some studies suggest that the cultural difference between Eastern and Western immigrants is best described in terms of a differential need for immediate or deferred gratification. For the lower class Eastern Jew, abstract learning is not part of his cultural heritage, though the importance of schooling for social advancement is accepted. He is more likely to have difficulty with the heavy demands of the European style high school curriculum and to respond better to an institution which promises job security and immediate financial success. But his Western counterpart, though helped by a cultural background more complementary to academic education, also is basically pragmatic in his orientation, impatient with material which may be interesting but seems irrelevant, and demanding that everything included be useful.

On the other hand, the social education of Israelis, considered a central purpose of the school system, would seem to be more appreciated and, in some ways, more emphasized by both teachers and students. The significance of participation in Israeli youth culture, centered around school and school-related activities and the formation of lasting friendship groups may far outweigh the narrowly defined learning experience of the school years. Class trips and overnight hikes, participation in national festivals and memorial days, as well as the compulsory paramilitary training and national service in high school are means of instilling knowledge and love of the land--and undoubtedly contribute to the integration of youth into Israeli society.

In this connection, the role of youth movements in influencing the style of Israeli education cannot be disregarded. Though decreasingly important as a factor in Israeli youth culture, some of their functions have been taken on by the schools formally as well as through extracurricular activities. In recent years, pupils have been increasingly involved in philanthropic and voluntary activities, conducting campaigns for the Cancer Fund, for crippled children, and raising money or volunteering to work to help the defense effort. When much of the male population was mobilized in May and June of 1967, high school pupils took over many local tasks, including the delivery of mail.

6. The Nature of the Educational Process.

a. Teaching Techniques: Teaching techniques are surprisingly conventional given the non-conventional character of other aspects of Israeli society. The approach is considered to be subject-centered and much of the teaching, especially at the secondary school level, is done through lectures. There is minimal use of audio-visual aids and laboratories are usually meagre if at all existent. Children have a heavy burden of homework, though there is a limit set by the Ministry, and many rely on private lessons to help them get through particularly difficult subjects, or to compensate for the lack of individualized instruction. The institution of the private teacher is so accepted that teachers seem to relegate responsibilities for difficult learners to them. Parents especially ambitious for their children will hire tutors to keep their children ahead of their neighbors', teach them subjects not yet reached in school, and generally make sure that nothing is being missed.

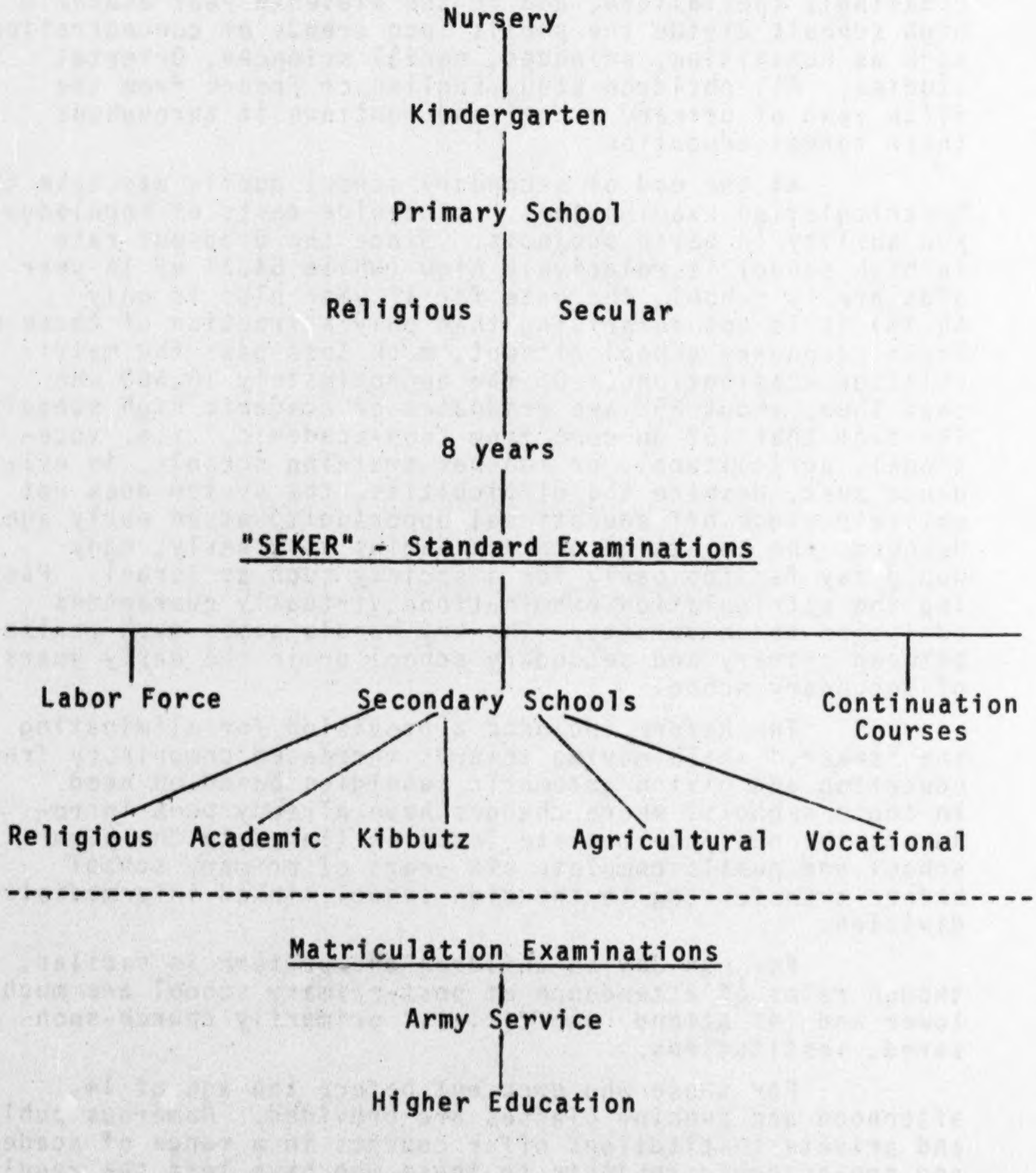
b. Classroom Interaction: As suggested above, and despite the formality of the system as such, teacher-student relations are generally informal. Students interact constantly with one another during classes and teachers, like parents, have a generally permissive attitude toward what elsewhere would seem to be terribly unruly children. The lively, joking spirit of the class sometimes, however, seems to limit the extent of serious learning which goes on. For much of the time, boys and girls mix on an equal basis with differences being ignored or de-emphasized. In secular schools, both wear slacks or shorts; both are in scouts together, and all activities are coeducational.

In Arab schools, where the tradition of strict discipline is maintained, classes are more orderly, children quieter, and the distance between teacher and pupil more firmly established. There, the traditional method of learning by rote--reciting aloud (and the louder the better) is maintained.

c. Students Sequence Through School: The State of Israel provides free, compulsory education for eight grades of primary school and a year of kindergarten, to the age of 14. Despite economic problems and traditional reluctance if not resistance to education for girls, overall attendance is high and literacy is becoming universal. In 1968, according to official figures, 98% of Jewish children aged 6-13 were in school. In Arab education, the figure was 84%. The difference is explicable in terms of the persistent though declining gap between education of Muslim, though not Christian Arab girls and boys.

A schematic representation of the students' sequence through school is presented in Figure 2. In the eighth year, children take the "seker" (survey) examination, instituted to determine elibility for reduced fees in post-primary education but, in fact, used to select pupils for admission to better high schools and indirectly to rate school achievement levels. Until recently, Israeli children went on to secondary school to the extent their families could afford it and their "seker" grades permitted. Since reduction of fees also took into consideration ethnic background and family situation and in the largely Eastern-populated development towns fees were eliminated, increased rates of secondary school attendance resulted. The gap beween East and West, however, remained. Among 14 year olds in 1968-9, the percent attending school was 85% for children of European or American Background born, and only 48.5% for

Figure 2. Sequence Through School


Nursery
Kindergarten
Primary School
Religious
Secular
8 years
"SEKER" - Standard Examinations
Labor Force
Secondary Schools
Continuation Courses
Religious
Academic
Kibbutz
Agricultural
Vocational
Matriculation Examinations
Army Service
Higher Education

those of Asian or African parentage. The gap is even greater if one considers the difference between secondary vocational, academic, and agricultural schools.

Beginning with the ninth year, education is increasingly specialized, and in the eleventh year academic high schools divide the pupils into trends of concentration such as humanities, sciences, social sciences, Oriental studies. All children study English or French from the fifth year of primary school and continue it throughout their formal education.

At the end of secondary school pupils may take the "matriculation examinations," statewide tests of knowledge and ability in basic subjects. Since the drop-out rate in high school is relatively high (while 64.2% of 14 year olds are in school, the rate for 17 year olds is only 40.7%) it is not surprising that only a fraction of those who begin secondary school attempt, much less pass the matriculation examinations. Of the approximately 10,500 who pass them, about 85% are graduates of academic high schools. The fact that 15% do come from "non-academic," i.e. vocational, agricultural, or teacher training schools, is evidence that, despite the difficulties, the system does not entirely close off educational opportunity at an early age. However, the selection process begins very early, many would say far too early for a society such as Israel. Passing the matriculation examinations virtually guarantees admission to university. The key hurdle comes much earlier--between primary and secondary school or in the early years of secondary school.

The Reform includes a provision for eliminating the "seker," while moving towards increased compulsory free education and giving automatic subsidies based on need. In those schools, where changes have already been introduced, the new intermediate level is linked to the high school and pupils complete six years of primary school before transferring to the high school-linked intermediate division.

For non-Jewish children the pattern is similar, though rates of attendance at post-primary school are much lower and 14% attend "unofficial," primarily church-sponsored, institutions.

For those who drop out before the age of 14, afternoon and evening classes are provided. Numerous public and private institutions offer courses in a range of academic and non-academic subjects to those who have left the regular system for the labor market but seek some further study. They may also take the matriculation examinations as external candidates and therefore qualify for university without having completed the formal requirements of academic high schools.

The kibbutzim, though officially subject to ministerial inspection, have maintained large autonomous systems providing education through the tenth or twelfth grade with, in some settlements, the opportunity to prepare for the matriculation examinations as external examinees.

II. DESCRIPTION OF THE ITV PROJECT

A. History of the Program

1. Reasons for Adoption. It is unlikely that instructional television would have been introduced in Israel if not for the initial interest and support of the Rothschild Foundation, Hanadiv. A 1962 survey, sponsored by the fund, presented recommendations as to its possible role in Israeli education. Initially they looked to the medium as a possible solution to the persistent problems of large classes (often 45-50 in primary grades) and insufficient qualified teachers. From the start, it was clear that instructional television would only be a feasible undertaking if it was given an integral, rather than merely supplementary, role in the curriculum. Recognizing that ITV was not a substitute for qualified teachers, the report suggested that it might offer a more immediate and direct means of improving education even with large classes, than investment in teacher education. The authors recommended an experimental period during which the ITV center was to be built, staff trained, and production begun for transmission to a small number of schools.

There was considerable resistance to the project in the government. Israel had no general television yet and the then Prime Minister, David Ben Gurion, was a leading opponent to any who suggested introducing it. But after long hours of parliamentary debate, it was agreed to permit the experiment and to provide full cooperation with the Instructional Television Trust (ITT).

2. Objectives of the Project. Since most efforts at innovation and change in education had come to focus on the problem of "underprivileged children" and probably because of the felt need for further justification of the project, the decision was tied to a commitment that these children be the focus of the project. The schools included in the experiment were to be chosen in terms of the socio-economic composition of the population they served and telecasts were to be designed specifically for them.

Once the basic agreement was reached, the decision had to be made as to which subjects would be attempted first. English and mathematics were chosen because they had proved the most difficult--involving the highest rate of failure on matriculation examinations. The third, biology, was chosen because it offered numerous possibilities for full utilization of the visual medium. Thus the more specific goal assumed by ITV in its initial period was to raise the level of achievement among disadvantaged children in these three subjects. In addition, the first education director saw two more general objectives: (1) to break down the sharp division into subject areas and find connections between them and emphasize underlying values (essentially an enrichment goal); and (2) to increase tolerance through exposure to foreigners, language and culture in a relatively natural setting (English).

3. Accomplishments of the Project. The first task was to develop a staff and acquire the facilities necessary for production and transmission. The sponsors provided all necessary support in order to develop high quality ITV without pressures of deadlines and government budgetary needs. Only when the staff "felt ready" would it begin transmission. Since the fact that the Ministry of Education was not yet financially committed, pressure from that direction was limited.

Israeli instructional television made its first home in what was to have been a supermarket in Herzlia, a northern suburb of Tel Aviv. Project "Eureka," as it came to be called, was essentially a school to teach and train future staff. Foreign experts were brought in over a period of several years.

Graham Phillips established the engineering department, directed plans for the physical facilities and for equipment purchases. Fred B. Rainsbery established the program department by bringing together production and education personnel. David Davis is credited with having given the push that set a tempo for production, determining the number of telecasts, maximizing utilization of the facilities, and maintaining a regular rate of operations. Producation was just underway in 1966 when Frank Stacheff of the University of Michigan arrived to train, guide and direct the operation. A lecture course and then practical training, directed by these men and others, was provided for potential members of the production staff. Programs were first produced as learning exercises and by January, 1966, when the staff moved into its permanent headquarters, they were ready to begin producing for transmission. In March, 1966, ITT began transmitting programs in three subjects to 33 schools chosen for the pilot project. The schools were selected by Ministry Inspectors according to the population they served, their geographic location (given the limitations of the transmitter in use at the time), and the degree of support and cooperation promised by the principals and staff.

Although a variety of techniques were used to evaluate success during the pilot study, there were no control groups followed to permit comparison between TV and non-TV classes. Thus, although the primary objective of instructional TV, according to the parliamentary decision, was to improve the education of the disadvantaged, it was impossible to determine whether, in fact, they learned more through television than without it, i.e., there was no way of determining whether the objective had been realized. The special TV committee established by the Ministry of Education ruled out such comparisons, claiming no interest in them. Given the sensitivity of Ministry officials to any mention of the "gap" between East and West (children of European and non-European background) and their decision to conceal data regarding differential achievement levels of social and ethnic groups, the decision does not seem to have been accidental.

In 1969, at the end of the experimental period, the organizational future of instructional television had to be decided. A Rothschild-sponsored committee recommended an independent self-supporting and publicly-owned center for instructional media with television as its central, but not sole, activity. The center would be free to determine priorities, to branch out into various fields related to educational materials, and would eventually operate at a profit through sale and export of its products and by-products.

A second possibility was that instructional television be incorporated into the state broadcast authority. By 1969, general television had been established and after a year's trial period under the supervision of the Prime Minister's Office, was now to be joined with the state radio in a single broadcast authority. The suggestion that television (general and instructional) be kept separate from radio in order to develop the special qualities of each medium was opposed by the directors of the radio and most members of the government. But the idea of including instructional television in a general broadcast authority had considerable support from those quarters. Strong opposition came from the ITT staff and from the Ministry of Education. They feared that, if incorporated into the same framework as general television, instructional television would suffer the fate it had met elsewhere and become more like a fifth wheel or stepchild than the more successful and innovative venture it already was.

The third possibility was for instructional television to be taken over by the Ministry of Education which already was involved in its operations, at least in an advisory and supervisory capacity and, of course, as the principal consumer. This alternative was viewed as a threat to the independence of ITV, as a probable limitation on its ability to set priorities and branch out into other activities. The period of experimentation and independence had given the directors of ITV a taste for more and when the decision was made to transfer the system to the Ministry of Education for a two-year trial period, they were disappointed.

Eventually, the decision was made to transfer all authority and responsibility for ITV to the Ministry of Education for a two-year trial period, after which the question would be re-opened for discussion. Transmission was rapidly extended to all parts of the country. The Centre for Instructional Television became an integral part of the Ministry with its directorate responsible to the Minister himself.[1] In the first year of regular (non-experimental) operations (1968-69), 465 of the state's 1,400 schools participated in the system. In the following year (1969-70), 1,000 schools were involved. New subjects were introduced and new series planned to replace those found faulty or outdated.

With the shift from experimental to regular broadcasting came a change in policy objectives. Telecasts were no longer intended specifically for disadvantaged children but were directed to the general audience. According to staff members this policy change resulted from the difficulties encountered in trying to produce for the "average" student in schools designated as culturally deprived, because of their neighborhoods' demographic characteristics. It was claimed that, even were the supposed target population an homogeneous one, it would be impossible to produce programs to fill specific educational needs before acquiring a minimum of basic experience and familiarity with the medium.

Yet from some staff members one gets the impression that the disadvantaged were never given the special consideration necessary to suit the medium to their specific needs. Within areas crudely designated as "deprived," schools were selected which promised to cooperate without regard for representativeness. No scientific attempt was made to determine the suitability of various methods to improve achievement levels of culturally deprived children.

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[1] When the government took on full responsibility in 1969, the name was changed from the Instructional Television Trust (ITT) to the Centre for Instructional Television.

The schools themselves were a heterogeneous group and the weakest pupils in one might exceed the achievements of the best elsewhere.

The lack of controlled comparisons meant that there was no way of indicating whether or not the original objective had been achieved. When transmission was extended, series originally produced supposedly for the disadvantaged were successfully used for the general school population, suggesting their equal suitability for both (and, therefore, presumably the limited extent to which they were particularly useful for the disadvantaged). In one case where the material was found to be too easy for the general population (arithmetic) the series was transferred from the seventh to the sixth grade, though it proved to be too difficult for sixth graders in "disadvantaged" schools.

Another factor involved in extending ITV to the general population was basically political. Once the medium had proved itself, it was only natural for political leaders to drop their fears and suspicions, and respond to public demands for instructional television. Now that public funds were involved, the fact that transmission to 1,000 schools and to 33 schools involved almost the same expenditures was also an important consideration.

The rapid jump, first to 450 in 1968-69 and then to 1,000 schools in 1969-70 was not entirely welcomed by ITV officials who would have preferred a more gradual increase. The change involved an entirely new scale of operations and ended the close interpersonal relations which had existed between teachers, principals, and the ITV staff during the experimental period. Teacher training was necessarily decentralized, carried out in regional centers and the link between classroom and studio so vital to success of ITV as conceived in Israel was threatened.

On the whole, the growth in numbers seems to have been accomplished with relative success. Regional training centers and the use of teachers experienced in ITV to train others has maintained the link to the television center. Participation in the training program is required of all ITV schools and the distribution of teachers' manuals and pupils' guides is centrally administered. If a school uses ITV, its teachers must be sent for training and only then will the written material be made available. The system is not altogether foolproof, however. A black market opened last year (1968-69) in teachers' manuals for those teachers and schools which wanted to use TV but had not officially joined the system. In this way, an estimated 2-300 schools use the telecasts "illegally."

4. Major Problems Encountered. The problems encountered in ITV were to a great extent foreseen though not necessarily avoidable. Three such problems involve the cooperation and support of classroom teachers, relations between the center and the Ministry, and the shortage of qualified personnel.

A variety of measures were designed to involve the classroom teacher as a participant colleague and thereby minimize hostility expected from those whose roles seem threatened. Training sessions and conferences emphasize the desire of the ITV staff for teachers' comments and criticisms. Telecasts already deemed inadequate may be shown at the training sessions in order to allow the teachers to "rip them apart" and feel gratified when they are changed or discarded. Advice and suggestions are requested and welcomed and the teacher is made to feel that his views and experience are an important and essential contribution in the production process as well as indispensible to their successful utilization.

A second problem would seem to be in relations between instructional television and the Ministry of Education. According to ITV staff members the fear that association with the Ministry of Education would be confining was not altogether justified. In most cases, the need to obtain ministerial approval for series as well as individual telecasts turned out to be a formality. Although Ministry officials could and did decide on priorities for new series, they have proved willing to accept suggestions and initiatives from the ITV staff. The idea for pre-school telecasts, now in the experimental stage, originated at the Center but found approval and support in the Ministry. In addition, ITV officials continued to plan for extensive developments in allied fields. A Center for Instructional Television and Allied Media was established, at least nominally, and exploration of the possibilities of producing series for export and developing other teacher aids, by-products of the production process, has begun. A series of telecasts for instruction of Hebrew has a foreign language is in production and, in response to results from abroad, the possibility of producing parallel telecasts in a second language (English, Spanish) is being given serious consideration. Thus, despite the organizational and financial tie to the Ministry of Education, the Center is to some extent proceeding with independent, externally financed, projects.

Another example of continued independence, suggesting even increased autonomy, is that of the evaluation unit. Restricted by the special ministerial committee supervising ITV during the pilot stage, the unit is now free to conduct controlled experiments in the schools and therefore, to measure the relative effectiveness of the new medium. As an integral part of the Ministry, they have the authority to decide on which schools and classes will be included in any study and to request their cooperation without prior approval from non-ITV officials of the Ministry.

In this connection it is interesting that the educational personnel attached to ITV at the beginning, by appointment of the Ministry, have become closer to television than to the education establishment in terms of their points of view and identification. Although their credentials qualify them as a bridge between the education community and the world of television, their continued association with the new medium and their increasing involvement in its more professional side (as producers) means that there remains a gap between the two.

There remains, however, a feeling among ITV workers that, although the Ministry has been relatively supportive and cooperative, that it doesn't really understand what television is all about, doesn't appreciate the full significance of the medium in the classroom and hasn't yet learned to consider the specific role of ITV in planning curricula. It was accepted policy that ITV should use new, rather than traditional, curricula wherever possible. However, the dependence of ITV production on the special curriculum units has been recognized since the early attempts at by-passing (or pre-empting) them failed. When telecasts were first produced there were no available curricula suitable. The English language team worked with a new program for teaching English to Hebrew speakers created by a committee working at Tel Aviv University and went ahead with production though the Ministry of Education refused at first to accredit the experimental program since it had no suitable inspectors. In natural sciences, the initial outline of the new curriculum was used with a relatively free hand to establish what was a new series of courses through television, based on the BSCS. Although the experience in both cases was useful and the importance of innovation lasting, it is now accpted policy that, with few exceptions, production only begins when new curricula are complete.

Though there may be some hints of the desire to innovate in education, to change the way things are taught and even the content of lessons themselves, it is recognized that for maximal utilization, ITV had best wait until curriculum is complete, the new books ready, and then define its own role in the framework. For this reason, the completion and availability of new curricula is the single most important determinant of which subjects will be added to the ITV system. In effect, the experimental and innovative approach which characterized early production has been sacrificed or limited in recognition of the need for support and cooperation from the Ministry.

An attempt at increasing understanding and awareness of the "other side," at a one day conference held for the curriculum units of the Ministry of Education at the television center, was an attempt at improving communication. A number of telecasts served as the basis for the discussion in which members of the production and programming staff participated as well. But the distance was more obvious than the goals in common.

Another problem has been a shortage of qualified manpower, and the associated problem of establishing lines of authority and communication within the system. Although the fact that ITV began before general television in Israel enabled it to attract and keep qualified and experienced talent that would otherwise have gone to the more glamorous medium, a strong sense of commitment and loyalty is evident among senior officials who share in the prestige of Israeli ITV, in contrast to the general television which has been plagued by constant criticism and near-scandal. Nevertheless, among the ranks of technical and production personnel, there is a noticeable drain in that direction. To compensate for the loss, courses are now beginning for directors' assistants and for technicians from which new staff members will be recruited.

B. Scope of the Program

1. Program Coverage.

a. Geographic areas served: From the pilot project during which programs in three subjects were transmitted to 33 schools, ITV in Israel grew to encompass 465 schools in 1968-69 and 964 in 1969-70. With the exception of small areas in the far south and the far north reception is sufficiently good to permit transmission throughout the state and the system is open to any schools which meet its requirements and conditions.

Table 1

SCHOOLS USING INSTRUCTIONAL TELEVISION IN ISRAEL[1]

	1969-70		1968-69
	Primary	Secondary	Total
North	130	34	-
Center	174	25	160
Haifa	100	46	-
Jerusalem	80	31	75
South	116	19	90
Tel Aviv	178	31	140
	778	186	465

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[1] These figures include, for 1969-70, 30 Arab primary schools and 12 Arab secondary schools.

b. Schools/pupils reached by ITV: No precise figures for the number of individual pupils reached by ITV are available because the extent of participation is based on the number of pupils' guides ordered, and one pupil may use ITV in more than one subject.

2. Curriculum.

a. Subject matter by grade level: In addition to geographical growth, the system has included an increasing number of subjects for different grades. The following table details the subjects taught for each grade and the number of pupils participating during the two years of general operations.

Table 2

PUPIL PARTICIPATION IN ITV BY GRADE AND SUBJECT

	1969-70	1968-69
Arithmetic-Mathematics		
Grade 7/6[1]	19,256	10,800
8	14,081	9,200
9	3,114	1,500
10	1,197	600 (trial)
Geometry		
Grade 6	19,222	900 (trial)
7	16,113	10,800
9	800	800 (trial)
English		
Grade 5	30,299	17,500
6	26,212	14,700
7	16,608	600 (trial)
9	3,586	800
10	4,261	800
Nature, Biology, Physics		
Grade 6	822	550 (trial)
7	700 (trial)	
9	2,502	2,500
10	450 (trial)	
Drafting 9	600 (trial)	
Kindergarten (pre-school)		
3-4 year olds	600 (trial)	

The total number of pupils for 1969-70 was approximately 140,000 in primary schools and 22,000 in secondary schools.

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[1] The series used for Arithmetic 7 in 1968-69 was transferred to the sixth grade in 1969-70.

Each subject included in ITV involves a continuous series of lessons. Telecasts last approximately 20 minutes except for introductory English (grade 5) where ten-minute programs are repeated later in the week. The number of telecast hours is roughly proportional (1:4) to the number of hours devoted to a given subject in the classroom. English and arithmetic are broadcast about once a week and repeated at least once and up to three times to accommodate scheduling problems. In natural science and geometry a new lesson is presented about every two weeks, but the spacing varies. In English, for example, there are planned gaps to allow teachers to catch up or use the time for additional material depending on the level and pace of the class.

b. Unusual or novel ways of presenting curriculum: In all cases the telecasts are integral parts of the curriculum. Except for the few exceptions mentioned, ITV has only begun production when new curricula, as required by the Education Reform were ready. Because of the association of television with the Reform, the spread of the new curricula which, in many cases, involved new material as well as new methods and approaches, has been far more rapid than would have been possible otherwise.

From the outset it was assumed that, wherever possible, instructional television should make use of the latest advances in curriculum planning as well as in teaching methods. In mathematics, this led to the use of ITV to introduce the "new math" (base system); the BSCS curriculum was used for science curricula, and within each series an attempt is made to be as up-to-date as possible, to present recent findings and unresolved issues directly from the scientists' laboratories. In English the emphasis is on grammatical structures and the central purpose of the new curriculum aims at acquiring the ability to converse freely and understand the spoken language.

The role of television in presenting the curriculum varies with the subject and with the classroom and studio teachers. Some telecasts are designed to introduce or to summarize a sub-unit, others are relatively conventional individual lessons. In English the concept of "key lesson" has been frequently used, in which each telecast is devoted to a different grammatical structure. Review lessons are used to summarize several weeks' work.

In all cases, the role of television in introducing new subject matter has been a significant one. But, as the teachers become familiar with the material, some telecasts will be (and in some cases, are already) superfluous. The relations of the medium to curricula, then, will undergo substantial changes and the differentiation of roles of studio and classroom teachers will increase. Telecasts whose purpose is to motivate the pupils, to extend their range of experience, and to "bring alive" the theories and exercises formerly confined to books and blackboards, will increase.

In addition to the subjects listed above, there are two series of weekly enrichment programs for primary and secondary grades. These are not integrally related to the school curriculum but are meant to broaden horizons, provide familiarity with cultural and scientific achievements, to heighten appreciation of Jewish and Israeli culture and history, and to increase awareness of local and universl issues of social concern. Participation in the series is voluntary. Schools using ITV are provided with descriptions of each series, and of individual telecasts together with recommendations as to suitable age levels. No information on the extent of viewing was available, however, since participation is irregular.

"A Page from a Book" is a ten-minute program for 6-8th grade pupils designed to encourage and direct outside reading. Selections are read by an actor or, where possible, by the author himself. The second series, "Face to Face," is an interview program in which three high school seniors question a public figure on subjects selected by a panel of students. Topics include science, art, music, and issues of current concern to Israeli youth. A special attempt is made to deal with problems of the society, such as immigration, inter-ethnic relations, security and defense, and relations with Jewish communities in the Diaspora. The topic for discussion and the questions are set in advance but otherwise the program is spontaneous. Individual telecasts have been tied to particular dates, such as the day of memorial for the Holocaust, or Independence Day.

Special programs have also been telecast in connection with Jewish festivals--these have been welcomed in the secular schools where they fill an increasingly felt gap in the curriculum, but considered superfluous or irrelevant in religious schools. Within the "enrichment" framework--telecasts are now being prepared concerning art history, Jewish communities abroad, and the geography of Israel. These will constitute individual series with a measure of continuity and inter-relatedness, though they will not be directly linked to existing curriculum requirements.

3. Utilization

a. Extent of actual usage: While there is no exact information as to the extent of actual usage but all evidence suggests that for classes participating in ITV viewing is quite regular. An attempt to obtain precise information failed to gain teachers' cooperation. Since the telecasts are an integral part of the curriculum the teacher is unlikely to miss one even if he is "behind." I fact, the pace of the television pushes (some would say "drives") the teachers to keep up in order to be ready for the next lesson since they have been taught (rightly) that without adequate preparation on their part the telecast may fall on deaf ears. However, for new teachers or for teachers involved in a trial series participation may not be constant. At a meeting of science teachers a large proportion of those present reported having been unable to keep up with the pace of the lessons and of having to miss one or more telecasts.

b. Determining ITV use: The decision to use ITV is now basically a decision for the school and the principal, except during the trial period when the selection is made by the television staff and receivers are provided for participating schools. The decision involves not only purchasing and installing television sets by the community or through a government allocation, but also a commitment to send teachers for training. It is taken in response to parents' demands, considerations of available teachers, scheduling problems, and the individual principal's own judgment as to the value of the medium for instruction in his school.

Since other "experiments" are going on in the school system, such as with other curricula in science and math, principals may not be free to introduce TV because of its link to a specific curricula. For the same reason, only those schools using new curriculum can use television. Finally, the principal must decide which programs to use for which grades and whether and how to make use of the enrichment programs. In the latter case, a schedule is usually circulated together with a brief description of each broadcast and teachers can inform the principal of their choice of programs for class viewing.

The Ministry of Education has taken the responsibility for providing all directly administered schools with receivers though other schools with similarly disadvantaged populations depend on the municipalities to purchase them. Despite the change in emphasis and the limited extent to which television is now seen as the solution to problems of the underprivileged, the belief remains--not without justification--that the new medium will improve education for all children. Undoubtedly, just as private ownership of television was at first a mark of prestige, its presence in the school adds credit to the community and belief that their children are being given the best.

Finally, just as during the initial experimental period, so during all subsequent trials, the schools participating are selected by the educational personnel at ITV and sets purchased and installed at ministerial expense.

The teacher who has agreed to join the system retains a certain amount of freedom in lesson planning. He can space the lessons according to the pace of the class, since all are repeated at least once and some up to three times. He may even have the class see a lesson a second time if necessary. A few series do not demand regular viewing. For Physics 9, for example, seven individual programs were produced relating to different topics covered during the year but without any integral relation between them. Teachers can use any or all of the programs according to their suitability for his own course. This situation is a result of the desire to utilize the medium at that level even though the syllabus is not yet complete. But for Biology 10, now undergoing a trial period, flexibility has been built into the regular series. The year has been divided into several small3-4 week sub-series, each covering a separate unit and prepared in association with a different consultant with the teacher free to select which if any of the series to use.

4. Costs of the Program.

a. Capital investments and recurring costs: Until April 1969, the major source of funds for which building and maintaining instructional television in Israel was Hanadiv, the Rothschild family fund. The Ministry of Education, which subsequently took over financial and administrative responsibility for the system, covered costs of "educational services"--training programs, writing and production of teachers' and pupils' guides, and salaries of educational personnel. A large part of the costs of the guides is covered by the sale price to pupils using them who may purchase them individually or have them purchased by the local school system. An additional source of income will come from the public sale of program schedules which began in January 1970, due to the increased demand from the general public. In addition, television center facilities have been used to produce programs for general television on a rental basis. In the future, an important source of income is expected to be the production of educational materials, by-products of television, and the production of programs for export.

The following table shows the overall expenditures over the last five years, in effect, since the start of instructional television in Israel. The figures are given in Israeli currency (IL. 3.50 to the dollar). Capital investments total $942,800 for the building and $1,028,570 for equipment.

Table 3

ITV EXPENDITURES: 1965-1970 IN ISRAELI POUNDS (IL.) 3.50IL. = $1.

Year	Building	Equipment	Operating Expenditures	Educational Services
1965	2,200,000	2,700,000	1,000,000	-
1966	900,000	150,000	2,200,000	-
1967	200,000	250,000	2,100,000	150,000
1968	-	200,000	2,300,000	1,000,000
1969 (January-March)[1]	-	300,000	1,000,000	
1969 (April)	-	-	5,100,000	1,500,000

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[1] Because of the administrative re-organization involved in the transfer to the Ministry, the budget for 1969 is divided for that year.

Table 4

OPERATING COSTS OF ITV
DETAILED EXPENDITURES FOR 1969-70

Salaries			
Accounting Department		IL. 31,896	
Building Maintenance		64,920	
Program Department		31,476	
Production Department		202,140	
Art Department		197,712	
Engineering Department		220,728	
Temporaries, special contract overtime, etc.		221,728	
TOTAL		IL. 970,000	($277,140)
Travel & personal expenses		IL. 50,000	($ 14,200)
Administration - general		381,000	($108,800)
Teacher training & guidance		75,000	($ 21,500)
TOTAL		IL. 1,476,000	($411,640)
Operating Costs:		1,476,000	($411,640)
Preparation of guides & manuals		1,598,000	
Production Costs:			
Film Unit	109,000		
Evaluation	160,000		
		269,000	
Production Department		264,000	
Art Department			
(stage materials, graphic and film materials, filming equipment, lab. work, film editing, rentals, etc.)		144,000	
Engineering Department			
(video and sound tapes, spare parts, additional components and cables, etc.)		205,000	
General Operating Costs			
(royalties, equipment, maintenance)		44,000	
Surplus from 1968-69		238,900	
TOTAL PRODUCTION COSTS		IL. 2,762,900	($789,400)
Transmission and Reception		500,000	
Income (sale of guides)		-800,000	($228,500)
New Equipment		44,000	($ 12,500)
TOTAL		IL. 3,938,900	($1,125,400)

b. Expenditures per pupil: The expenditures for materials supporting telecasts include IL. 52,490 for teacher training programs and IL. 238,355 for program preparation. The remaining expenses were for the production of 13,000 teachers' manuals and 190,000 pupils' guides. These were sold at a cost of IL. 0.25 - IL. 0.65, (about $0.07-$0.08).

Training costs included: IL. 23,890 to set up 50-60 installations and to cover salaries of technicians to run the sets; IL. 3,600 to rent television sets for 6-12 days, and IL. 25,000 to cover costs of conferences, training days, and transportation for pupils.

It is estimated that approximately 0.75% of the total Ministry of Education budget (IL. 450,000,000) is earmarked for instructional television. At the level of operations in 1969-70, this meant approximately an additional IL. 20.($6.) per pupil. It was not possible to separate other expenditures within the ITV system from the total education budget.

III. TRANSMITTING END OF THE TELEVISION OPERATION

A. Description of the Television Center

1. Functions Performed at the Center. Almost all tasks involved in telecast production and transmission are carried out in the television center at Ramat Aviv. This includes writing, rehearsal and video taping of all programs, editing and development of original film, selection and dubbing of foreign films, construction of stage sets, and development of teaching devices. Selected classes of school children are brought to the center for "product tests" of a new series. Teacher training is based there, though additional regional centers have also been established. Periodical conferences of teachers, inspectors, and principals are held at the center. A film library and archive have also been established. The only related activities done primarily outside the building are printing (of guides, manuals, schedules) and original filming.

2. Facilities. The building includes two studies, each of about 220 square meters in size, with fully equipped production control rooms and auxiliary facilities. A central master control room serves both. There is a photography lab, a paint shop, a carpentry, and a welding shop on the premises. A large room is available for conferences, meetings or rehearsals. The library is also used for meetings or training sessions.

3. Equipment. The equipment includes five 4 1/2 inch image-orthicon cameras, two video-tape recorders and two

telecine chains. In the 1970-71 budget proposal, a request was made for IL. 612,500 to replace equipment and included the following items:

Telecine-video monitors	1
Helical scan	1
Wave monitor	2
EHT Unites for Viewfinders	5
Head sets	6
Sound tape-recorders	2
Microphones	2
16mm projectors	2
Camera lenses	
Lights and accessories	
Sound equipment	
Telephone switchboard	
Signal testing generator	
Pedestal and Pan Till Head	
Improvements in air conditioner (reducing humidity for VTR)	

In addition, most offices are equipped with television receivers.

B. Composition and Characteristics of the Staff

Although the organization is still undergoing constant change, its basic outline is indicated in Figures 3 and 4. Figure 3 represents the original pattern of relationships with the Ministry of Education and Figure 4, the present table of organization.

In considering various aspects of staffing problems, certain factors must be kept in mind. Skilled manpower remains at a premium in Israel--undoubtedly because of the relatively low wage differential in public service and the limited accessibility of higher technical education. Technicians do much better financially in the open market, particularly since the phenomenally rapid introduction of general television throughout the country. Secondly, every male worker (and, in some cases, females as well) is subject to being called for army reserve duty for at least a month, and sometimes two or three, each year. This must be considered in planning either by hiring extra workers or training them in more than one task.

Figure 3. Table of Organization: Instructional Television Trust, 1966-69

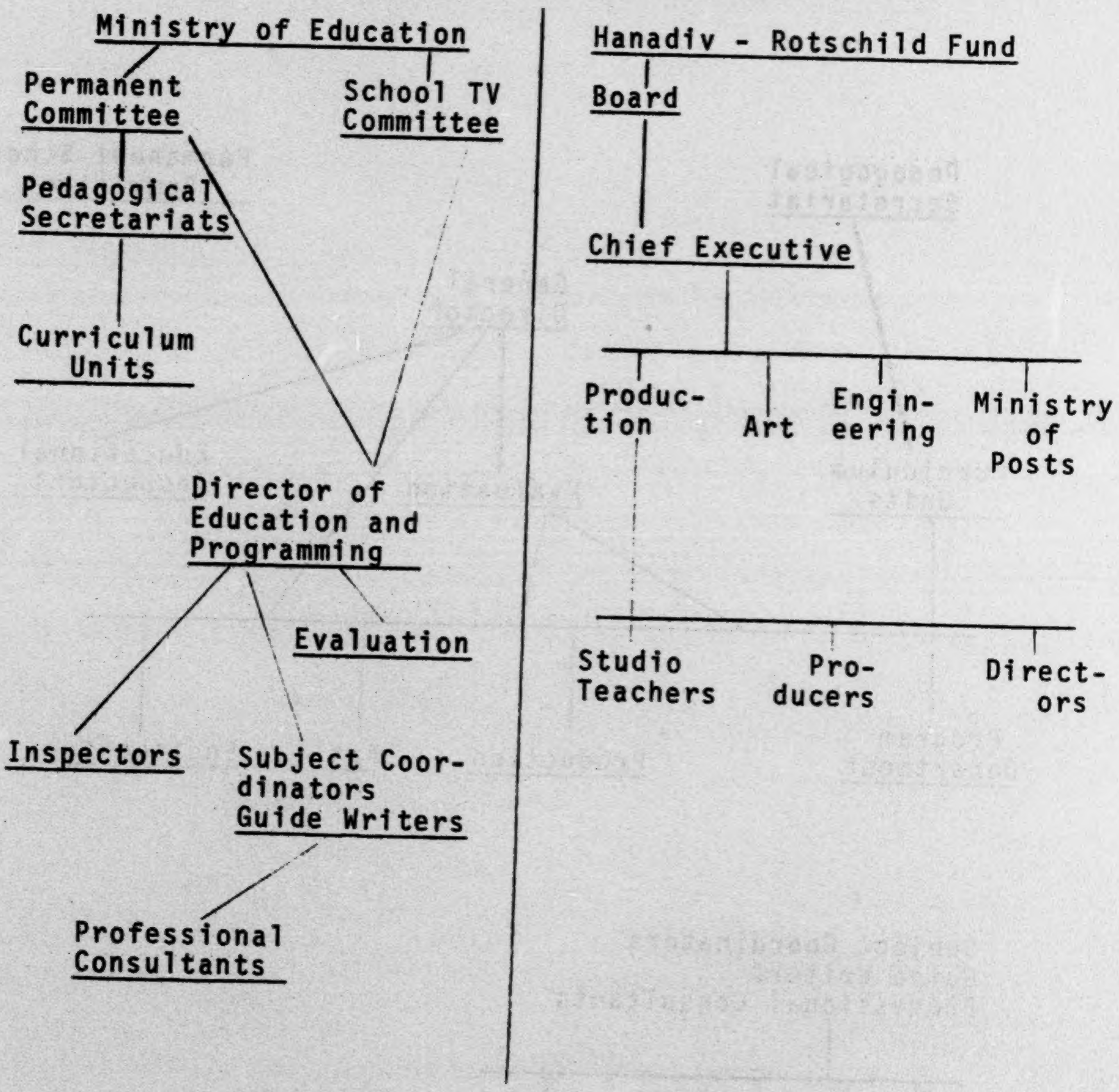
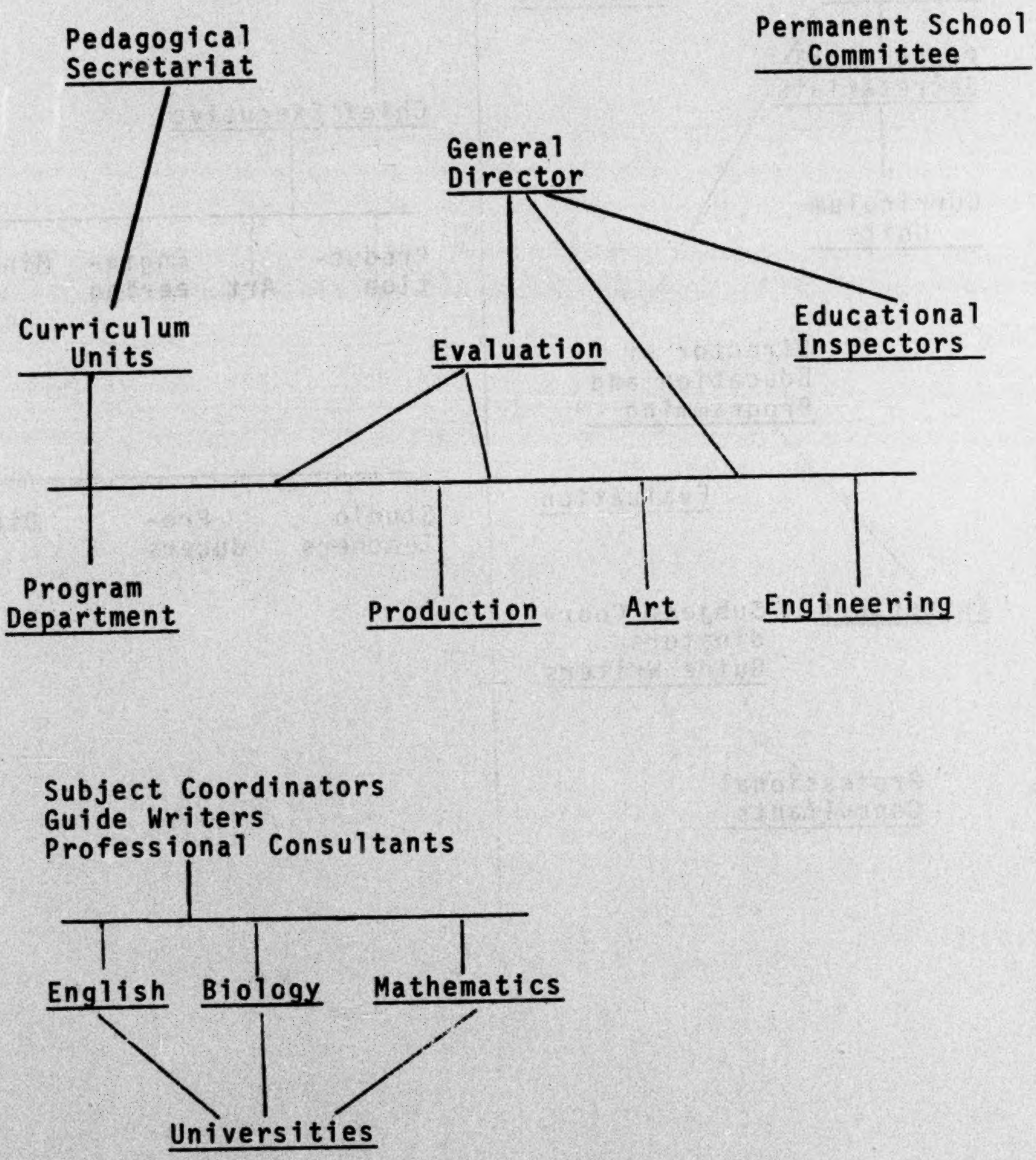

Ministry of Education
Permanent Committee
School TV Committee
Pedagogical Secretariats
Curriculum Units
Director of Education and Programming
Evaluation
Inspectors
Subject Coordinators
Guide Writers
Professional Consultants
Hanadiv - Rotschild Fund
Board
Chief Executive
Production
Art
Engineering
Ministry of Posts
Studio Teachers
Producers
Directors

Figure 4. Table of Operations:
Ministry of Education and Culture Center
For Instruction Television, 1969


Pedagogical Secretariat
Permanent School Committee
General Director
Curriculum Units
Evaluation
Educational Inspectors
Program Department
Production
Art
Engineering
Subject Coordinators
Guide Writers
Professional Consultants
English
Biology
Mathematics
Universities

The present staff numbers 104, distributed as follows:

Director's office	2
Accounting	5
Maintenance	16
Programs	7
Production	21
Art	19
Engineering and Technical	19
Special contracts	
Maintenance	4
Production	10
Art	1
	104

The staff was first selected and trained with the guidance of foreign experts brought to Israel for the purpose by Max Rowe, secretary of Hanadiv, the Rothschild fund. Those selected for senior positions were given the opportunity to travel in order to learn and observe instructional television systems. Of the foreign experts, one left a particularly lasting impression on ITV in Israel--Professor Edward Stasheff of the University of Michigan. Others, especially David Davis, Fred Rainsbery, and Graham Phillips also made important contributions as described above. Unlike general television which suffered because the CBS experts came for short periods of time, ITV benefitted from the fact that "their" experts came for several months or longer. Even so, their value, as perceived by staff members, was limited by the amount of time necessary to become sufficiently familiar with Israeli society and education to be useful.

1. Technical Staff. The first department established was engineering. Director was selected by Graham Phillips of the BBC who did some training and helped with initial organization. He was an electronics engineer with experience in the Israeli Air Force as well as in RCA--Advanced Developments Section in the United States. The transfer from air force radar to the technology of television production and transmission was an easy one and within a short time a technical staff was built up.

Most members of the technical staff are graduates of technical high schools. A few had further education in Israel or abroad. But most of the actual training was on-the-job or in special courses organized for the purpose. At first, everyone did everything. Technicians were responsible for sound, maintenance and installation. However, this versatility is not seen as a primary goal but as a necessary answer to the problem of army reserves. (A good cameraman should be just that--a cameraman.) Increasingly, the tendency is towards specialization, though each member of the technical staff must still be capable of fulfilling at least two different tasks.

The basic division of function is as follows:

Soundmen	2	
Technical Director	1	
Transmission Engineer (also does film dubbing)	1	
Lighting	3	(plus 2 when using two studios)
VTR	2	
Telecine	1	
Maintenance	3	
Shift Manager (high grade technician)	1	
Installation engineer	1	
Operators	2	(also fill in with lights as needed)

Cameramen who, until recently, were part of the technical staff, have recently been transferred to the art department, though electronic cameramen remain in the technical department.

The position of the Art Department is primarily a result of its director who returned to Israel in 1965 with eleven years of experience in American television and theater. The staff was built of people without television experience, most with training as graphic artists, and the emphasis continues to be on versatility. The graphic artist is taught to do animation, to design sets, and to build special devices for teaching aids. Those selected were chosen not for their style but for their lack of a defined style, a quality which would permit them to adapt to the needs of each program. Five graphic artists are trained to work in graphics, animation, and set design and, take responsibility for all three aspects of each production. A separate film department works with the directors filling specific orders from original material or from edited material purchased abroad. And, as noted above, film cameramen are now included here.

The remaining employees work in the photography lab, paint shop, welding shop, or carpentry on the premises.

The table of organization has undergone several important changes and is not yet fixed. The center is divided into production, art, technical and programming departments, all of which are involved in the actual production process. The programming department which, from the beginning, was staffed and maintained by the Ministry of Education, has been without a director for over a year and, as a result, does not really exist as a separate integral unit except for administrative and budgetary purposes. In practice, separate units for each subject (English, mathematics, biology, etc.) operate with relative independence. Two former inspectors, originally hired by the Ministry to supervise the educational aspects of production, retain some general responsibility for TV curriculum planning and production.

2. Curriculum Development and Production. Curriculum development is primarily done outside the television center itself, by special units established for the purpose by the Ministry of Education following the Reform legislation. Although in the first years of operation production teams essentially created new curricula, the current practice is to begin production only when the curriculum unit has completed its work. For English language telecasts curricula are developed, as noted earlier, by a committee working at Tel Aviv University. The involvement of ITV begins at a general meeting of the production team with the curriculum unit and invited outside experts to discuss the objectives and prepare a tentative outline for the telecast series.

A production team for a given series includes the following members:

Producer
Director
Assistants to producer and director
Presenter
Script writer
Professional Consultant
Subject Coordinator
Graphic Artist
Technical Director

The ideal team, according to the Director of Production, would include one producer's assistant and two assistants to the director, though this has not always been feasible. Producers, directors, presenters and script writers are members of the Production Department. Professional consultants, subject coordinators, and guide writers are linked to Programming.

The present staff of the production department numbers thirty-one, ten of whom are on special contract. This includes 15 producers and directors, four of whom work only as producers, and assistants. Originally, telecasts were produced by teams of three--a producer-director, professional consultant, and presenter-script writer. Later, the roles of producer and director were separated. This seems to be a result of the recognized need for division of labor, the scarcity of professional producers willing to work for instructional television, and the advantage of involving people with educational backgrounds in more phases of the production process. Thus, while television (abroad) and theater provided the first producer-directors and continues to be the background of all directors, two producers began work as teacher-presenters. It is claimed that training teachers to be producers is easier than providing producers with the academic background considered necessary to create successful instructional telecasts. Of the assistants, some came to television with professional experience while others received on-the-job training. With the increasing competition from general television the problem of staffing has become more acute and courses are now under way to train directorial assistants.

Not surprisingly, there is a recognized difference in the approach of producers from different backgrounds. One teacher-turned-producer had noted the contrast in the control room while she found herself concentrating on the educational content and clarity of presentation, a professional producer would be concerned more with staging and problems of direction.

Professional consultants and subject coordinators are hired on a special contract basis and, though affiliated with the program director, play integral roles in the actual production process.

The role of the consultant varies with the individual. In many, but not all, cases, he is also consultant for the relevant curriculum unit and in this case serves as an additional bridge, and one with considerable prestige and authority. Being a consultant is rewarding in terms of prestige and salary and no one has thus far refused to take on the task when asked. They are hired on a special constract basis, and if he is interested and suitable, the consultant plays the dominant part in the production team. In some cases, however, he may participate only in certain stages of the process with a much more limited role. Consultants are generally selected for their expertise and their positions--most are university faculty members with, if possible, a special interest in education. ITV has been able to attract "big names" from the Weizmann Institute, the Hebrew University and neighboring Tel Aviv University, ans some played an important part in shaping the system in its infancy. However, criticisms are voiced that many of the man (in professional terms) have been overlooked or turned down as candidates, possibly because of the convenience of working with faculty from Tel Aviv University (still behind Jerusalem's Hebrew University in many fields).

Subject coordinators, teachers qualified and experienced in their field, are responsible for much of the administration involved in planning and producing programs and are directly responsible for teacher training and for the writing and distribution of teachers' manuals and pupils' guides. Several coordinators were originally hired as studio teachers and may continue to write and/or present TV lessons. Some have gone on to be producers.

3. Teaching Staff.

a. Broadcast educators: Studio teachers were, to begin with, script writers as well. Recently, in several cases, the tasks have been separated. They were selected on the basis of their professional training as well as their photogenic and personal qualities. Where they are responsible for writing as well as presenting the script, their time is divided between writing and re-writing and working with the director on their style of presentation. Where two people are involved, the useful addition of another viewpoint may be cancelled by the cumbersome nature of the expanded production team, and the need to suit the script to the style of the teacher so that he feels it is his own. They are by the hour hired on a spcial contract basis.

Recently the policy, formerly firmly maintained, to hire only teachers as presenters, has come under reconsideration. The difficulty of finding suitable teacher presenters has been one of the greatest stumbling blocks in keeping to a production schedule. For certain series the decision has been made to experiment with professional presenters. Thus far, however, actors have only been used in dramatic situations included in English telecasts, in the new series on citizenship now undergoing experimentation, and in the enrichment series, "A Page from a Book."

Thus, most members of the production and program staff, except for the directors, come from the educational system, either directly from the classroom or from the ranks of inspectors. Teacher-presenters are hired on a contract basis and usually continue to hold part time jobs as classroom teachers, a fact which is seen as adding to their success in communicating from the screen. In general, however, they are far better educated in their fields than an average teacher and in some cases approach the competence of the professional consultant. To the extent that they are experts in their field it becomes especially important that the consultant selected for the series in one with whom they can easily work. In an initial planning session for a new series for Biology 10, for example, several experts were discarded as candidates simply because the teacher-presenter, himself a doctoral candidate at Tel Aviv University, indicated that he would rather not work with them.

b. Classroom teachers: There is no information available on the characteristics of classroom teachers participating in ITV as separate from the general population of teachers, but there is little reason to suspect that they differ in any great respect. Since the decision to use television usually depends on the principal's evaluation that a teacher is qualified to use the new medium successfully, teachers using television may be slightly more qualified than average, but even this is a doubtful assumption.

The following table presents relevant data on the composition of the total teaching population.

Table 5

SELECTED CHARACTERISTICS OF ISRAELI TEACHERS[1]

	Hebrew Education	
	Secondary Schools (1965/66)	Primary Schools (1966/67)
Total	8,142	19,828
Men	4,667	5,600
Women	3,475	14,228
Median Age	33.2	29.8
Born in Asia, Africa	703	3,495
Born in Europe-America	4,294	7,264
Born in Israel	2,920	8,623
Israel born (% of total)	37.0	44.5
Immigrated since 1948 (% of total)	33.8	34.6
Median Years of Teaching	4.9	8.0
% non-qualified		26.8

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[1] Israel Central Bureau of Statistics, Statistical Abstract, 1969, p. 553.

Arab Education (1966/67)

Median years of teaching	8.2
Non-qualified teachers (percent)	49.6

c. Para-professionals: No para-professionals are used in the classroom on a regular basis, at least none which have been added or introduced along with television.

4. Inducement to Teachers. There does not seem to have been a need for inducements for teachers to join the ITV production staff, other than that offered by the high reputation of its products, the pleasant work atmosphere, and the glamour associated with television, even in its instructional style. Unlike the situation with technicians where the free market offers considerably higher salaries, teachers who join the production staff may eventually earn more than they would had they remained in the classroom. During the period of the pilot project, teachers hired on a full-time basis earned 40% more than they had in the classroom, but worked longer hours.

C. Software Development

1. Procedures Governing ITV Programming Design, Production, Scheduling, and Distribution. The procedures governing design and production of telecasts will be discussed in detail below. Scheduling is done by a former inspector, now assistant to the general director of ITV. To the extent possible, there is an attempt to consider problems of variation between schools operating on different schedules and of special teachers who work at different schools during the week. Distribution and classroom utilization are directed by the subject coordinator and, particularly during trial periods, by the evaluation unit. The final decisions regarding utilization are taken by each principal.

2. Sequence of Production. A series begins with the completion of the syllabus by the committee of educators and experts working under the Ministry of Education. At a meeting attended by committee members, and the production team suggestions for translating the syllabus into a series of telecasts are raised and discussed. Outside experts with no formal connection to either the Ministry or to ITV are invited to contribute suggestions and advice. Thereafter, the production team takes over. The sequence of events from content determination to taping/telecast (all programs thus far have been videotaped) is given below in a schedule prepared by the production department.

Description of Procedure from the Time Script is Received until Broadcasting

Planning of series; advisor determines the educational goals and the format they will take; teacher; scriptwriter; producer and director; consultation with the head of programming, head of production, art director and head of engineering department

21 days before broadcasting

1. First production meeting to consider the first draft of the script.

   Discussion Topics: educational goals, experimentation and first formation of the program's character from the aspect of appearance (changing script from that of "class lesson" to studio lesson).

   Participants: producer, director, teacher, professional advisor, representative of the sequence unit and art director. (If the program is intricate--it is also necessary to meet with the head technician.)

2. Additional meeting if the use of animation is planned, or if the script was filmed on 16mm film directly after the first production meeting.

   Discussion Topics: filming problems, choice of procedure and determining of time-table.

   Participants: producer, director, teacher, professional advisor, graphic artist, art director and cameramen.

3. Additional meeting if examples (models) are called for.

   Discussion Topics: settling of construction problems, determining which materials will be used and the time-table to be followed.

   Participants: producer, director, teacher, profesional advisor, graphic artist, stage-manager and head technician.

16 days before broadcasting

Second production meeting to consider the final draft of the script.

Discussion Topics: final corrections and final decision on the visual elements to be used; slides, pictures and cards. Solution to animation and filming problems.

Participants: producer, director, teacher and art director. (The professional advisor works, at the same time, with the staff, and is asked to attend this meeting only when solutions to problems require his presence.) The cameraman and graphic artist participate towards the end of the meeting (if deemed necessary).

14 days before broadcasting

Third production meeting after permission is received from the professional advisor to proceed with filming.

Discussion Topics: final reading of the script: giving the required directives to the graphic artist necessary for his end of the production, and final clarification of all elements for the "outward" appearance of the program.

Participants: producer, director, teacher, assistant director, graphic artist and art director.

Activities: script is given over for production; graphic plans are given over for production and scenic design begins.

11 days before broadcasting

1. The produced script is handed over to the professional advisor, the production staff, the graphic artist and the script editor.
2. Graphic material is gone over by the script editor.
3. The technical laboratory receives the necessary material for the production of regular slides, slides for an overhead projector and pictures. This is done only after script is edited by the script editor, the producer or the director and the teacher.

7 days before broadcasting

1. Film clips or film animations are handed over to the telecine. After the "o.k." is received, they are passed on to the production staff.
2. An order is made for special and regular technical aids to be used in the weekly production of the program.
3. Summons for a studio working staff is given to the stage-manager.

4 days before broadcasting

1. Meeting on technical problems.

Discussion Topics: the studio plan for broadcasting, agreement on the solution for scenic problems, scenic designs, sound and tone procedure in the studio.

Participants: director, head technician and soundman.

2. Samples are tested by either the producer, director or teacher (or all three).
3. Graphic material is given a final test.
4. Slides are tested by the telecine.
5. Preparation and recording of music for the program.

2 or 3 days before broadcasting

1. "Dry" run of the program.
2. Scenic designs are put up in the studio.

1 day before broadcasting

Final rehearsal and light adjustment. "Last minute" details taken care of.

3. Determining Curriculum Content and Presentation. The first task is to divide the curriculum into units and select topics for ITV presentation. Several criteria were given as basis for selection of sections of the curriculum to be televised:

1. Material which is known to be difficult for the teacher. Here the hope is that by including the material in the telecast, the teachers will get direct training as part of their preparation.
2. The teacher knows the material but it's a difficult subject to teach.
3. A new approach is involved which hasn't yet been used in schools. Television aids and speeds the process.
4. There's no other way to teach it except by showing it on television, e.g., cell division; implantation; synthesis.
5. The material is particularly suited to television and, therefore, will be included, though otherwise would have been omitted.
6. A "key lesson" which brings together several points in a concise way can be used to summarize, introduce, or as the focus of a unit.

In addition, there are criteria specific to each subject area. Although one official expressed his "rule of thumb" that there ought to be a reason for everything appearing in an ITV telecast, some lessons are admittedly not particularly suited to the medium but are produced because thy are necessary for continuity in the series. The alternative might be to have long gaps without telecasts and introduce ITV only at certain times of the year. This approach has been turned down in favor of the policy which seeks a continuous series of telecasts which is not fully effective unless integrally related to ongoing classroom work. Though the series may, to some extent, be able to stand on its own, this is not the objective.

Thus, in English, some telecasts are key lessons described above while others are straightforward lessons on a single structure. All combine direct teaching with dramatic situations applying to the lesson. Within the English series are several programs which are basically for enrichment--dramatization of a story without any actual teaching included in the telecast. But, in the case of English, the very fact of presenting children with a situation in which native English speakers play, work, travel--but primarily converse--is enough to justify use of the medium. And were it not for the enormous change in teaching methods and curriculum involved with the introduction of television, the English telecast might be all enrichment.

When ITT set out to prepare a series of English telecasts, they first had to work out their own curriculum. In consultation with a committee at Tel Aviv University which had been working on the special problem of teaching English to Hebrew speakers, they devised an outline of key topics--grammatical structures--which were to be the basis of the series. The emphasis was to be on the use of the spoken language, on its colloquial forms, rather than on the extensive vocabulary necessary to read the "great works" of English literature included in earlier curricula. The telecasts were necessary to introduce the new approach, though once the teachers are experienced their role may be increasingly confined to that of presenting dramatic situations, exposing the pupils to conversation and offering them enrichment. A producer of English telecasts looks forward to this development since she fears that the scientifically structured curriculum "may lead to a situation where children can give directions and order a meal, but will be unaware of English literature." She adds, "It's enough for me if they see one of our enrichment programs and run to the library for the book in its Hebrew translation. Perhaps in a few years they'll read a simplified English version and maybe even attempt the original."

In the case of natural science, the situation is quite different. Here too television was important in introducing and spreading a new curriculum, in some cases introducing subjects which were barely taught--if at all--earlier. But in science there are some topics which cannot be taught effectively on television and some which can only be taught when the medium is available. A constant consideration is the degree to which the telecast will deter rather than encourage children from laboratory work and individual exploration. Because of this, with few exceptions, anything that can be easily done in the classroom is not done on a telecast. This decision is not always an easy one, given the variety of school facilities and the fact that in most cases they are minimal and dependent more on the individual initiative of the teacher than on the school system.

Topics selected for telecasts include those involving experiments which cannot be done in the lab, exposure to a greater variety of materials of living things than would be possible in the classroom, or presentation and discussion of practical applications (e.g., in industry) of experiments done in class. In addition, certain programs are meant primarily to arouse curiosity, to help the pupil appreciate the beauties of nature in the hope of motivating him to study it. "Crystals are so pretty and so varied, so we show the children how they grow, primarily for the aesthetics of it." Of course, some crystals which take days or weeks to grow can be shown with a camera and not easily in the classroom. Another type of program deals with the scientific method and uses of television to present in a story form an exercise in testing hypotheses.

On the other hand, the general consensus is that chemistry cannot be taught on television--that experiments must be done to be believed and understood and that the black and white camera, even with measuring devices, cannot present the child with a correct understanding of chemical reaction. Thus, the role of ITV is to extend and enrich, rather than replace or even direct, the pupil. For example, after children have learned to separate mixtures of salts in the classroom, they see a telecast in which the separation process is done on a much larger scale--at Israel's Dead Sea Works.

In mathematics, the situation is quite different and far more problematical. It was recognized, from the first, that the subject did not particularly lend itself to the possibilities of television; but the learning problems of teaching and learning mathematics were sufficiently great to justify any attempt which might improve the situation. As in the case of the other subjects, ITV introduced a new curriculum, but the differences here were undoubtedly far greater than in the case of either English or the natural sciences. ITV in Israel introduced the "new math"--or the base system--though not to the exclusion of any more traditional approaches. Because of this, the math series, perhaps more than any other, cover the entire curriculum. It is recognized that many of the programs will become unnecessary (the same is true of science and English) once the teachers are more familiar with the material.

In some cases the consultant will have already prepared a detailed plan of telecasts and, if acceptable, this forms the basis of the series. On other occasions, the consultant may join the process at a later stage and play more of an advisory than a directive role.

If the teacher is also writing the script he works simultaneously on writing and acting. Thus, as soon as the series outline is established, he begins writing scripts to be used for training rehearsals. As soon as a script is ready--even in draft form--a member of the art department enters the picture, working with the director to decide on appropriate techniques and plan for any necessary devices, animation, or stage sets. The technical director enters at a later date, unless the production is particularly complicated and requires his presence at least in a consultative capacity in the earlier stages.

If there is a question as to the choice of alternative approaches, the producer may request a comparative test of two programs, carried out by the evaluation unit. Thus far, this has been done in only a few cases, though the director of production sees as an aim the production of several scripts in order to test, compare, and decide on a more scientific basis than individual intuition or time pressure.

The search for the teacher-presenter and the actual script writing process are the most difficult and time-consuming parts of the operation. For this reason, production usually begins well before the scripts for a series are complete. In fact, a new English series is the first for which all scripts were complete before production began.

During the "pre-production" period candidates for teachers are screened. A course is run, introducing the prospective teachers to television and having them write scripts while preparing for screen and voice tests. The selection is done by the producer, the consultant, and--if possible--the director for the series. Sometimes, after the second screen test, no candidates remain and the search begins again. Once the teacher is selected he goes to work with a director and a professional consultant and begins working on techniques of presentation and on writing. The director is involved in the script writing--to give suggestions, comments and criticism. A good director should be, as one teacher-turned-producer put it, "wild with ideas." Although the producer will probably have been thinking of "visuals" from the start, the entry of the director as an active member of the team, once the outline is set, marks the beginning of translating the topic and the script into a telecast.

Techniques of presentation are discussed, discarded, and selected--the teacher-writer must decide which if any of the director's ideas fit the content of the program and which do not. Next, the scripts are sent to the appropriate curriculum committee for comments and suggestions. At a meeting with the graphic artist, techniques and style are discussed and set. As much as possible, the aim is to avoid cuts or splicing in the final product. After two rehearsals --one a dress rehearsal--the production is taped.

Once telecasts are completed, "product tests" are conducted by the evaluation unit with school children brought to the studio. Usually one or two telecasts in a series are tested. In the cast of the new Citizenship series, each program is being tested. Children are asked to answer questions before and after viewing the telecast and then given the opportunity to criticize or praise the program. If parallel scripts have been produced there will be a careful comparison of the results of each and selection made accordingly. The report of the evaluation unit to the production team is meant to guide further productions in the series and may lead to changes or even a remake of the original telecast.

Once a series is complete or, in some cases, even before the entire series is ready, transmission begins to a selected sample of schools. Only after the series has had a trial period is it made available for general distribution.

a. Sensitivity to students' characteristics, capabilities, needs: In planning programs, there is an attempt to consider the heterogeneity of the audience, its limited attention span, and its demand for variety. Though programs are now supposedly designed for the "average child," many of those produced in the experimental period for the "underprivileged" are now considered suitable and are in fact being used for the general audience. The hope is that the middle 50% will understand the telecast and learn from it, the brighter quarter will be stimulated by at least part of it, and the weaker 25% will at least get the basic point though they may lack complete understanding. Producers claim that it is impossible to create a program for a specific audience. Thus, it is recognized, that the mere exposure to native speakers of English for twenty minutes each week can do more to arouse interest in learning and, at least, give a certain familiarity with the sounds of a foreign language than a single teacher (generally not a native English speaker) could ever hope to do in the classroom.

Through observation and teachers' reports, members of the ITV staff have learned at first hand what pupils like or dislike about the programs and try to consider their findings in subsequent productions. As we will see later, the question of learning effectiveness is a more difficult one to answer and does not necessarily lead to similar conclusions.

In the English programs, for example, a policy has been adopted in favor of maximal variety--in sequence, in situations, in characters. This was contrasted by a staff member with Japanese programs she had seen in which the format was identical for each telecast. "Israeli children wouldn't stand for it. They would scream from boredom."

Several mathematics series used an experienced teacher with an excellent reputation who, however, turned out to be too stuffy and verbose on the screen. As a "corrective," he was given a young girl as assistant. But pupils reportedly complained that she wasn't real--she always knew the answers--and that they couldn't identify with her. Similar responses were voiced with regard to the puppet used in lower grade arithmetic lessons, though younger children responded more positively. But to build in mistakes in order to make the situation seem real seems itself artificial to staff members. When a mistake occurs, however, it's a great "success"--the children in the classroom shout to correct their TV teacher who always is so perfect and the accident is retained in the tape.

b. Sensitivity to particular sub-groups: The shift in policy from emphasis on underprivileged to concentration on "average" children has meant that programs are produced and transmitted even in cases where a majority of culturally deprived children fail to learn from them. The arguments defending this practice include those mentioned above regarding the difficulty of suiting programs to particular audiences and also the claim that, for these children, individualized instruction which ITV cannot offer is really the best, if not the only, solution. One remedy, recently introduced, is to eliminate grade designations and encourage flexibility in suiting ITV to different levels. A math series is now being used, for example, by both fifth and seventh grade classes.

Although instructional television in Israel originally sought to solve the educational problems of a particular sub-population, the general approach to programming was never really directed to that or any group. To the extent that the characteristics of the target population are considered, it is in a negative sense--to avoid insulting, hurting, or in any way even differentiating between various ethnic or religious groups.

In English lessons, because of the need to present dramatic situations, this question constantly arises. No single policy exists. Since a secondary aim of the series is to expose the Israeli child to a foreign culture, it is only natural that many of the telecasts are set in some undefined land where people speak English. But, on occasion, the setting is clearly Israeli and there one must be wary of offending. If anyone eats, he must wear a skullcap. A woman cannot wear a sleeveless dress. Both these restrictions have been imposed by the religious sector of the Ministry of Education.

One producer also expressed the desire to avoid social and economic distinctions--"If it's a birthday party--the children will make presents instead of buying expensive ones." But, in an Israeli setting, speaking English is likely to be synonomous with higher status and, though it is impossible to erase the association, it may be possible to modify its effect by having the characters seem as average as possible--if such a thing is feasible. Thus, after considerable hesitation to show any interior home scenes, it was agreed that a simple, neat setting--in good taste without being extravagant could be used. Admittedly, this would not resemble in any way the homes of many of the children. "But that in itself is not a reason for not showing them that a home can be nice, neat, and clean." Obviously, the line between imposing cultural values and merely presenting a pleasing and possible alternative is a thin one.

At the center of the telecast, even in the dramatized English lessons, is the teacher. Thus far, all teacher-presenters are of either European or American birth or background. This is said to be a coincidence and is not surprising, given demands made of candidates and the small number of Easterners who might qualify. In one case a candidate of Bulgarian birth (and accent) was virtually selected for a series when the Ministry of Education refused to accept him as he was not fully qualified as a teacher. This situation is not representative of that in the classroom where an increasing number of teachers are from Eastern countries. Ethnic differences are apparent to children, perhaps particularly to Easterners--and teachers are usually readily identifiable in terms of their accent if not their appearance.

But besides the ethnicity, accent, and appearance of the teachers, manner is important. Here, the view was expressed that the goal is not to mimic the classroom situation or the Israeli scene--but to present an alternative. "We want the programs to present an air of calm and composure--not to be like the classroom where the teacher is often frantic and neurotic--trying to discipline and teach at the same time. Not that I don't appreciate her problems... after all, we do live under constant tension...and their brothers may be at the Canal."

A delicate problem came up in planning a program on hygiene as part of the nature series for sixth graders. The children were to be taught the importance of sanitary food packaging. Since many Israelis, but especially those from Eastern countries, shop at open fruit and vegetable markets, the lesson would be too obviously biased were the contrast made, for example, between an open fruit stall and a modern air conditioned supermarket. The solution was to show correct and incorrect ways of displaying food--both in an open market and in a supermarket, and filmed with no evidence (human or otherwise) to identify the sites. In the same lesson, the right and wrong (sanitary and unsanitary) way of preparing felafel (a popular sidewalk snack) was illustrated through the use of clownlike silent pantomimist.

In addition to the large minority of so-called culturally deprived children, overwhelmingly Jews from Eastern countries, ITV includes a second sub-group with problems which are somewhat similar but basically distinct--the Arab school population. Two Arab primary schools in the "mixed" towns of Ramla and Lod were included in the initial sample. In 1969, ITV served 30 Arab primary schools and 12 Arab secondary schools throughout the country.

Here the basic problem is one of language. Although Israeli Arabs, to the extent that they live or work with Jews, learn to speak Hebrew at an early age and begin formal education in the language in the first year of primary school, the language barrier still limits the effectiveness of telecast lessons in Hebrew. While this has not meant that Arab schools have been left out of the system, or even that they have been limited to using English telecasts, it does mean that comparability with effectiveness in Jewish schools is limited.

Nevertheless, Arab schools use ITV with a fair degree of success in mathematics and nature as well as in English. However, the role of the classroom teacher is necessarily different. In some cases he may provide simultaneous translation or explanation before and after the telecast in much greater detail than would be necessary elsewhere. Although during the experiment the two Arab schools showed considerable progress in arithmetic as a result of ITV, a principal indicated that this was the most difficult of all ("If they did the same programs in Arabic, it would be wonderful.") On the other hand the fact that the telecasts are in Hebrew is not without its advantages. Since a great many Arab children, at least in Ramla and Lod, go on to study at a Hebrew high school (vocational or academic), ITV helps prepare them for the experience of studying in Hebrew and, according to one principal, gets them used to the way of teaching in Hebrew schools.

But most Arab children who go on to secondary school do not enter Hebrew schools. And in the schools of East Jerusalem where television has been introduced for English lessons, Hebrew is still barely mastered. In the case of

English there is no particular reason to think that the telecasts are not suited for the Arab child, though there does not seem to be any particular attempt to bring in situations specifically familiar to him. To the extent that the settings are Israeli, they are Jewish Israeli--but carefully designed not to be offensive in any way. In this respect, consideration of Arab sensibilities leads to some of the same conclusions as does consideration of the feelings of religious Jewry--neither group accepts women in "immodest dress."

One might expect to find differences related to teaching methods and style. In Arab schools much of the teaching is through repeated oral drill, learning by rote rather than by understanding. Children literally shout their lessons as though a hoarse throat was proof that they had done their homework. Thus, while ITV for almost all children in Israel involves a departure from traditional teaching methods, for Arab children the change is even more marked. Whether this has any effect or importance in determining its effectiveness, however, remains a question for investigation.

4. Learning Reinforcement. Each series of telecasts is accompanied by a teacher's manual and a special workbook distributed to pupils. Both are prepared by teachers working under the subject coordinator and in association with the script writer. But there is no attempt to enforce uniformity in approach and style. In fact, one subject coordinator favored the idea of giving expression to different points of view--letting each item approach the topic from a slightly different angle. The necessary degree of uniformity will be added by the subject coordinator who is responsible for all material associated with a series in his field.

Examples of pupils' and teachers' guides for English lessons accompany this report. The first guides had to be textbooks as well as workbooks since no books were available to suit the ITV curriculum. Since then books or booklets have been prepared by the committee at Tel Aviv University and printed and distributed by the Ministry of Education. In general, the curriculum unit prepares original textbooks which are available before TV producation begins. The guides serve to introduce each telecast and include exercises to precede and follow each lesson. The teacher is given detailed instructions as to preparing the class and reinforcing the learning process after the telecast. In some cases special guides have been prepared of special instructions included to help the teacher adapt the material for use in underachieving classes. The guides also serve as a memory aid to help the pupil recall the content of each telecast and presumably, strengthen its effect on the learning process through latent reinforcement.

D. Presentation Techniques

1. Novel Means of Presentation.

In discussing methods of presentation, it is difficult to determine what is novel or unusual. Within the context of the Israeli school system a great deal that appears on ITV telecasts is novel and, recalling that general television has only existed for a year on a regular basis, one realizes that the introduction of the medium itself constituted a novelty and a great attraction to pupils. However, staff members suggested that excitement associated with the new medium might be a deterrent to learning and welcomed a more "normalized" atmosphere.

2. Scientific Techniques.

a. Cultural context. We referred earlier to the attempt at avoiding elements which might be offensive to segments of the population. There is however, a positive attempt to make the context familiar wherever feasible. Many programs make implicit or explicit references to Israeli places, names, or even problems. Thus negative numbers are illustrated by the descent below sea level to the Dead Sea and adding mixed numbers is an opportunity for a trip from Tel Aviv up to Jerusalem and down to the Dead Sea (through, it might be noted, the occupied West Bank). Another arithmetic lesson uses Israel's balance of payments problem and export-import figures, graphically represented by a model ship, to make its point. The lesson is introduced by a radio newscast reporting on Israel's balance of payments situation. At the same time that he learns to add mixed numbers, the pupil is taught the meaning of words and phrases frequently heard (real, recorded) on the radio and is encouraged to read economics analyses in the newspaper.

One English lesson re-enacted a rescue operation in which a young volunteer fireman saved a child and brought the actual fireman, child, and her parents to participate in the telecast. We happened to observe this lesson in a classroom in Rishon le Zion, hometown of the boy involved, and nothing could be more familiar or relevant. So much so that, the teacher remarked, the children get so concerned and tense since they know everyone that they really don't learn from the lesson.

In another English lesson, "A Man's Face" which recently won an international prize in Japan, the chief of police plays the part of the policeman helping a girl recreate the face of the man who took (stole?) her bag. Other situations include welcoming new immigrants, meeting an uncle-geologist who has been searching for oil in the Negev, and taking buses to and from Tel Aviv.

In science programs two general aims are to be as up-to-date as possible and to present the pupil with an opportunity to see science "in action." Both are realized when a resident, Israeli scientist, team, or institution is engaged in research relevant to the topic at hand. The researcher himself may be brought to the program. But it is generally considered preferable to go to the scene--the laboratory, the lake, or the desert. As part of a unit on "man and his environment" in which the sea as an environment is studied from all aspects, a camera crew went out on a marine biology expedition with researchers from Tel Aviv University.

But the programs are not all parochial. Where relevant, there is an attempt to introduce names and places which may be distant and less familiar. A dramatization of O'Henry's short story, "The Last Leaf" is an opportunity for a few words and pictures about New York. In an English lesson on comparatives (farther than, nearer than, taller than, shorter than) two children visit a travel agency and bet about the relative distance of different points on the globe. A geometry lesson on triangles recalls the ancient pyramids and man's eternal curiosity about the sea is expressed in a biology lesson, by paintings of the Vikings.

No instance was noticed of any mention of any politically or socially sensitive issue--even the mildest reference to the "security situation" was absent. And the only allusion to Arabs noticed by this observer was in a discussion of various calendars in a lesson on frequency distribution.

b. Accommodating different levels of ability. Although, as already noted, present policy is not to suit programs to different levels but to the "general average," there are various ways in which the system allows for flexibility. The structure of each telecast, while by no means uniform, is such that if one gets lost in the middle he will probably be brought back by the end. In the process of explaining and exemplifying the teacher probably goes beyond the level of the average pupil, but returns to him before closing. The hope is expressed that even the weaker pupil will benefit. In the case of English this is clearly possible. In science it ought to be possible to arouse his motivation and curiosity--and should be easier through the magic of the screen. But in mathematics, to the extent that the material is seen as too difficult anyway, the child may just give up at the beginning. One teacher complained that because of television he constantly had to race to keep up and didn't have enough time to teach the basic material...which the weaker pupils had been able to absorb earlier. "Now," he claimed, "they don't even learn the minimal things--like addition and subtraction--which may be more important than the 'new math' if they're leaving school in a year or two." Nevertheless, during the experimental period, classes of underprivileged children from "better" schools with better teachers when taught "new math" through TV. This attitude may reflect the teacher's uneasiness about relying on the new curriculum and on its ability to replace conventional approaches.

One problem mentioned by teachers working with television is the rapid pace of the programs. Although ITV staff members have learned that teachers always complain the first year and are more satisfied the second time around, some changes have been made in response to these complaints. In one case the overall pace of a series was slowed. Elsewhere, two series were established proceeding at different rates to suit different class levels. But this is seen as not providing sufficient flexibility.

The dreamed-of ideal would put transmission in the classroom--allowing the teacher to use the telecast when she feels it would contribute most. The introduction of EVR to permit greater flexibility is supported by the station's director with control either in the hands of the teacher or the principal. But, it is entirely possible this change might well undermine the accomplishments of Israeli ITV by loosening control of the teachers and therefore the learning process itself.

c. Integrating classroom and telecast work. All aspects of the course are integrated, one with the other. Books are written by the curriculum unit; pupils' guides include exercises directly relating to each telecast; discussion preceding and following the program is directed by the teacher's manual. If the class is in the sample selected by ITV's evaluation unit, it is given achievement tests prepared at the center at regular intervals. While teachers are repeatedly instructed that these tests are more for evaluating the programs than the children, it is known that they are used extensively for grading purposes. Furthermore, teachers whose classes are not in the sample, clamor to receive copies of the test and presumably use them anyway. This is largely a result of the absence of adequate testing instruments. Of course the teacher is still free to plan the use of most classroom hours and to give his own written assignments; but he is likely to feel bound by the course and the knowledge that the class must be prepared for the next telecast.

d. Focusing attention and retention. Certainly, the most delightful and relevant program is not of use if it does not lead to retention of what is being taught. In the search for a balance between entertainment and learning, ITV in Israel has tried many combinations. It is recognized that if a telecast is perceived as pure entertainment, learning will suffer. For this and other reasons it has been the policy to include a teacher--even when the entire telecast is a film with voice-over narration or when it is a dramatization. Techniques for focusing attention include having the studio teacher pause, ask questions, and request classroom response. In many English lessons the presentation approaches a drill on a given structure as the studio teacher has the class "repeat after her."

The pre-telecast and post-telecast lessons are particularly important here and teachers complain that the value of the telecast is lost if they haven't enough time after it to review certain points and make sure that they have been understood.

Repetition is considered important; but not to the point of boredom. Israeli children are regarded as restless and relatively undisciplined so they ought to be kept busy. But, lest he forget he is watching a lesson, a dramatic situation in an English lesson will be interrupted by the studio teacher coming to teach the day's grammatical structure.

The problem of how to talk has not yet been solved. Some studio teachers appear to be "talking down"--talking to children--while others do not. It is not clear which style is most effective, since in any event the studio teacher is likely to be perceived as a teacher unlike any the child has known in the classroom. They do become real for them, however. Popular studio teachers will be referred to by name--"our Yohana"--and the class will respond to her "Shalom, children" with a "Shalom, Yohana."

The need to provide a means for identification with the teacher and the subject is clear but not the means to achieve it. Thus the introduction of a pupil-helper in a mathematics series hurt rather than helped the learning process. On the other hand, the use of a puppet in the elementary school arithmetic series proved to be a success. But here, again, there is a demand for change. "They're sick of Dudu by now," reported a principal whose school has participated in the pilot project.

There are then no set rules for the organization of a telecast, except that it be entertaining enough to keep attention without detracting from the material, sufficiently varied in levels to hold the attention of the best pupils without losing the weakest entirely, and clearly focused on a few central points. A good telecast is the result of months of work by about 17 different people and it's no wonder, then, that the result is far superior to any single lesson by an individual teacher in the classroom. But it cannot be too condensed, though to the extent that the class has been well prepared, it will appreciate and respond to what is familiar. Thus, in the sciences, teachers reported good results when, after conducting the experiments in class, the children could identify and participate in the telecast dealing with the same subject. They would call out to each other in response to what was on the screen as they saw reactions or plants or animals they recognized. Here the telecast plays a reinforcing role in the classroom. Other programs may be more useful as an introduction to a topic or as a basic first lesson to be followed and reinforced by the teacher. Where the material is new and/or the classroom teacher unfamiliar with it, it is especially important for the studio teacher to take the first step.

e. Improving language ability. Although there is a recognized need to improve language ability given the fact that a large proportion come from homes where Hebrew is spoken as a second language, if at all. In recent years there has been an attempt to improve the situation by introducing homogeneous grouping in Hebrew and trying to work out approaches suitable to different levels. There was some thought given to the possibility of a television series in Hebrew language though the idea has been set aside, at least for the time being.

In general, the attempt is to use correct Hebrew without being overly formal and academic. The studio teacher wants to be understood and therefore, she or he will try to avoid unfamiliar words or expressions. The style is clearly more popular than the national radio, Kol Israel, which has had the role of bringing the language policy of the Academy to the nation. It should be clear that a constant problem in using Hebrew is the need to find new words or resort to foreign words. New words may be much less familiar and, if used, will be explained or even "translated," generally to English.

In science, the issue of word selection comes up frequently. The decision not to use a new Hebrew word, but to keep the familiar Hebraicized English or Laten equivalent is likely to bring letters of criticism from teachers who make a point of avoiding such words. Finally, every script is submitted to a language editor who checks for grammar and word usage.

3. Presentation Principles Governing ITV Lessons. To the extent that general "presentation principles" in TV lessons may be defined, they have been outlined above. Dramatic or semi-dramatic situations are used frequently with live actors, puppets, or animated figures. In science and mathematics as well as in English, the studio teacher may actually participate and then remove himself, speaking directly to the classroom audience; he may introduce the situation and then return after the sketch for the lesson; or the telecast may begin with the "story" itself. In most cases, the "drama" is not merely an illustration, but is used for teaching and may be analyzed and repeated or "dissected" visually. A lesson on scientific method, for example, presents two situations in which children try to figure out whether light travels faster than sound or not by

comparing (1) results of a race determined by the sound of the smoke of the starting gun and (2) the difference between hearing thunder and seeing lightning. A teacher interrupts and explains the steps in scientific method and the action continues, marked by musical signs to denote hypothesis formation, testing, proving or disproving which are applied in the child actor's attempt to discover who left him a note and what was meant by its cryptic message "you missed out." He identifies the friend and discovers he'd missed going to a football (soccer) game.

In an English lesson the initial dramatic situation is "dissected" as the teacher explains various grammatical structures and the relevant dialogue is visually repeated through a window on her blackboard.

A nature lesson in dental care is introduced by a scene at a dentist's office (sign on door reads "Visiting Hours: Before It Hurts") and a discussion between two young patients, one who comes regularly and another who doesn't and is in terrible pain.

In mathematics, the dramatic situations are less common and used more for illustrative purposes or to present the applied significance of the problem. "Inverse functions" are introduced by the teacher and his helper in a baloon--they rise with it and note changes in height and pressure and then return to "earth," to figure out the relationship between the two variables. Often, in these and in science lessons for upper grades, drama adds humor and presumably increases motivation--as in a biology lesson on "how fish breathe" which opens with the teacher in an aquarium--possible for television but not in reality because teachers don't breathe like fish.

Though such telecasts are frequent, many other are straightforward lessons--using mechanical ornimated devices as in a classroom. The amount of "talk" varies. Though most ITV staff members accept the principle that the medium demands that talk be minimized and visuals maximized, this is not always possible in practice. A mathematics series is criticized because the presumption that teachers or teacher-presenters are inadequate resulted in telecasts with too much teaching and talk and too little use of the visual medium.

4. Preferred Methods of Presentation. The choice of methods is determined by available resources, the inventiveness of members of the Art Department, judgment of the production team, and results of evaluation studies. Again, it is impossible to list which methods are most frequently used; virtually all imaginable techniques have been tried, and continued, altered or rejected.

Handwriting on a glass board was found to be unclear and uninteresting, so mechanical and animated devices are used. Words appear and disappear, rearranging themselves to form sentences or to label concepts. Arithmetic operations are visualized through animation--stick figures moving along a scale. An attempt to use "picture sentences" in English--building sentences through pictures turned out to be too complicated and unsuccessful as learning devices. A "table" built for English grammar with words and phrases "falling" into place was discarded as visually less effective than alternative methods.

Puppets turned out to be more useful as helpers than a live student. The evaluation unit found that children do not learn more through having "one of them" involved as an auxiliary teaching role. The "voice-over" technique has generally been rejected in favor of direct dialogue in English programs, though it is used in some science programs and in the new citizenship series to a limited extent. (In the latter case because of the delay in selecting a teacher.)

E. Links to Classroom/Student

1. Keeping Tabs on Classroom Use of TV Material. As noted above, TV material is only made available (officially) to schools whose teachers take part in the training programs. But except during the experimental period and for initial trial periods with new series, there is no direct way of keeping tabs on actual viewing. Studio teachers are supposed to spend a regular number of hours visiting classes participating in their courses. In addition, producers, and other members of the production team are encouraged to visit the schools. To the extent permitted by time considerations, these visits maintain the connection. In addition, the evaluation unit maintains a check on a sample for each ITV series.

2. Methods for Getting Reactions from Teachers and Students. The methods used to get reactions from teachers and students will be discussed in detail in the section covering evaluation procedure. They include direct observation by individuals specially hired and trained by the evaluation units, teachers; reports--both written and oral; meetings between production personnel and classroom teachers, special achievement tests and comparison of scores on standard national examinations.

3. Methods for Handling Technical Problems. At the classroom level, certain technical problems associated with media use must be solved. The television sets themselves are bought and cared for by the local community except in cases where the school is chosen for an experiment or when the Ministry of Education directly administers and supports

the school. For schools participating in the pilot project, the television staff took bids by local firms and came to an agreement with one for installation and servicing of the receivers. There have been some difficulties in servicing, however, since the direct communication link between school and technicians hasn't always been efficient.

The greatest number of complaints from teachers and perhaps the greatest single source of difficulty in effective use of the system has been the distribution of teacher and pupil guides. This also has been contracted to a firm responsible for printing and distribution. After an accumulation of complaints, the firm was changed, seemingly with some improvement. Teachers at training sessions complained that they hadn't received the materials and it is acknowledged that, during the first year of general transmission, the material wasn't available for the better part of the first third of the year. But the fault does not always lie with the television center or the printer-distributor. In at least some of the cases, the orders were not received in time either because of inefficiency at the school level or because of the uncertainty as to whether incoming teachers would agree to use ITV and therefore, a delay in ordering materials.

4. Teacher Training. From the outset, it was assumed that instructional television could have a maximal effect only if it was accompanied by pre- and post-telecast lessons in the classroom to reinforce the learning achieved through the program itself. To assure this, it was important that responsibility and authority for teacher training be centralized at the television center. This is regarded as especially important when content as well as method are new.

All teachers using television must take part in training and preparatory courses either at the center, or at one of the regional centers established to accommodate teachers living at a distance from Tel Aviv. No single pattern of teacher training has emerged, as the search for the optimal approach continues by ITV staff members who see this as the crux of the problem of building effective ITV.

The training is divided into theoretical and practical --learning the new material and gaining familiarity with the use of television in general and in the specific course. In the early stages teachers first received guidance in theory and only afterwards (once the telecasts were ready and available) instruction in the role of ITV and the objects of each telecast. More recently, the training has been mixed--theory together with the actual telecasts and practical preparation. The general impression is that the latter method is more successful--that focusing on telecasts leads to more absorption by the teachers and that the arrangement allows for more time to deal with methodological problems.

Courses are held during the three holiday vacations, roughly in October, December and April, and in the summer. Teachers, having already received their manuals, are shown each telecast after an explanatory introduction by a member of the production team, then given any specific instruction necessary, and an opportunity to ask questions, criticize and make suggestions. Usually the teacher and producer will be present as will the subject coordinator and, if possible, the director. They are intensive courses and regarded as demanding if not exhausting by teachers in the system who hesitate joining ITV primarily because of the training sessions. An eighth grade arithmetic teacher noted, "In two days you have to learn the material for a whole third, understand the purpose of each telecast, and be quick enough to think of any questions or problems which might come up later. I would return literally dead from each session."

In addition to the preparation courses organized directly by ITV, study conferences for teachers are held during summer and holiday vacations under the auspices of the pedagogical secretariat and its associated curriculum units. These focus on changes in curriculum content as well as new teaching methods and are open to all teachers.

Despite all the efforts at requiring attendance at training sessions there is a limit to the amount of control possible. Some teachers may not attend or may not remain for the full day of instruction. One new (Arab) teacher using television in his first year reported that he had to leave at noon, but that his sister who had already been trained helped him. Furthermore, it is not clear that, in terms of the theoretical material at least, that the limited and intensive format of courses is best. For those teachers who know the material it is unnecessary; for those who do not it may well be insufficient.

One plan which would capitalize on the apparent success of TV as a medium of instruction for teachers, is to televise lectures on new material as soon as the curriculum is available and before production is completed. Teachers would be informed of the coming changes, would be asked to view the special series (at home, in the afternoons) and would get credit after passing a final examination. Once the series was ready, they would have only to become familiar with the individual programs and the use of the medium. This procedure, it is believed, would save time and travel, allowing more time for absorption of new material. According to schedules, the first training series should begin within the next year.

But the training courses are not only a means of teaching new theory or allowing the teachers a preview on the telecasts. One of the biggest problems encountered elsewhere in ITV programs has been teacher resistance. By bringing the teachers into the picture and giving them the feeling of involvement the problem has been largely avoided.

IV. MEDIA AND THE SCHOOL SYSTEM: THE RECEIVING END OF THE TV OPERATION

A. Target Student Population

At this point it is impossible to provide information about the population characteristics of students using ITV, though such information will soon be available. In a brief questionnaire attached to the national examinations given at the end of primary school were included questions on ITV instruction together with basic demographic data and future educational plans.

B. Effects of ITV Use on the Educational System

It is too early to identify the long range effects of ITV on Israel's educational system. Any attempt is complicated by the fact that its introduction has been closely linked to the educational reform and, specifically, to extensive changes in curriculum and in school organization. We will try, however, to identify those areas which seem to have been most affected and comment on the significance of the changes.

1. Effects on School Organization.

a. Inter-school relationships. There would not seem to be any direct effect on inter-school relationships as a result of ITV per se. In the long run, relationships between those schools or, more likely, those teachers using ITV, may become closer as a result of regular meetings, training sessions, and conferences; but the sytem is too new and too much in the process of development to tell whether there is any tendency towards establishing a differentiated ITV school network within the national system.

b. Changes in status structure. However, changes in the roles of educational personnel are already evident as a direct result of ITV and curriculum reform. The inspector system which, in any case, has been under examination with a view towards extensive changes, has been substantially altered. Whereas, in the past (and in those fields where curriculum reform has not yet begun), the inspector had an active role in determining the content and methods used in his field or district, this is no longer the case. Rather than the conventional curriculum which was a crude outline of topics to be covered, a list of concepts or readings, or vocabulary to be known, he is presented by a detailed syllabus with lessons closely planned and instructions as to teaching methods. In a sense, his job is easier--he is responsible for seeing that the program is successfully carried out. This is the same whether or not television is involved, though in order to fulfill his task effectively he will also be given special preparation in use of the new medium.

But the creative aspect of his role has been limited if not altogether removed. For those inspectors who may have played an innovative role, rather than one which was merely administrative and disciplinary, this may be a difficult transition. Of course, if they really are interested in creativity and in curriculum planning, they may join one of the planning units and take a more active role in executing the Reform. If not they have little choice but to accept their new task and, possibly, its lower status.

Realizing this problem, ITV has attempted to cater to the inspectors--arranging separate conferences and meetings with them to involve them in ITV by giving them a voice, albeit one without much actual influence. Their meetings are separate in keeping with their status--though there would seem to be little reason in principle why teachers and inspectors could not attend at least some of the same sessions.

While the role of the inspector is undergoing change, a new role has been introduced into the system--that of the counsellor. Several counsellors or "guides" have been appointed within the educational system during the last few years with responsibility to observe and aid teachers with neither the authority nor the obligation to report to superiors on what they find in the classroom. The purpose is clearly to improve teaching without creating the tension and anxiety which had come to be associated with visits by an inspector whose impression might directly determine one's future.

Instructional television, in establishing regional training centers, appointed as counsellors teachers who already had experience with television and who they considered to be successful in using the medium. The range of counsellors is very great--it is still too early to evaluate whether they are adequately equipped to direct new teachers in the use of television.

c. Expansion of the school system. There does not seem to be any direct relationship between the introduction of ITV and the expansion of the school system. It seems reasonable to assume, however, that the policy favoring school consolidation will be favored as smaller schools will be less able to respond to parents' demands for instructional television. An alternative to classroom or school control of broadcasting, through EVR, may be regional direction which will certainly lead to some restructuring of the system.

d. Changes in school practices. Similarly, there is not yet any sign of change in school practices, though this may also be a matter of time. Since courses with and without television are now considered equivalent, there is no reason to establish separate credential systems. Schools do not keep track in any systematic way of whether or not each pupil has studied with ITV.

With regard to testing methods, it would appear that instructional television will contribute to wide ranging changes in testing. In developing achievement tests to evaluate the success of individual telecasts or series, ITV entered a field in which little work had been done in Israel. The problems which arose in devising appropriate tests and the dissatisfaction with the system whereby the teacher-presenter wrote them himself, has led to a search for alternative arrangements. In the coming months, a course in the theory of testing will be held with the aim of selecting and training a group of teachers who will write achievement tests to be used to measure and compare progress with and without ITV. As noted earlier, the interest expressed in obtaining the tests by teachers whose classes were "left out" of the sample suggests that there is a real need for carefully composed tests and that, though not an original purpose of the program, may eventually be filled as a result of research and experimentation at the television center.

2. Changes in School System Design.

a. Physical changes. The presence of television itself in the school necessarily affects the use of space and the problems of scheduling. In some schools televisions are fixed on wheeled platforms which can be moved between rooms. Since many Israeli schools are on one level--often built around a courtyard, this arrangement, while involving a bit more installation, allows for minimal change in former patterns of classroom use. Elsewhere, television sets are fixed in certain rooms (classrooms or, in one case observed, the library) and classes move at the time of scheduled telecasts. The television sets themselves were either equipped with a locking device, enclosed in a cabinet or otherwise secured. In one school (in one of the country's wealthiest suburbs, it might be noted) the principal showed this observer the special iron gate he had installed to close off the area in which the receiver was kept.

b. Restructuring of administrative functions. In each school, much of the administrative burden associated with television has fallen to the principal, though there is no sign as yet of his taking on additional help for this reason. Scheduling of classes is done, to the extent possible, in order to facilitate the use of ITV in the chosen subjects. ("The first thing I do, in planning the schedule, is to mark down when there are telecasts and when I have special teachers.") This isn't always possible because of the problems of outside (specialist) teachers and because of the rigidities in the television schedule. Thus, for example, a principal of an Arab elementary school complained that he was unable to participate in the nature series since programs were scheduled on Friday or Sunday, the two days of rest in Israeli Arab schools. Repetition of telecasts may allow a teacher who teaches in two or even three schools during the week, to use ITV in more than one school in the same course. But this reduces the individual teacher's flexibility in suiting the pace to the class by allowing a longer time gap between telecasts in order to catch up. For teachers working full time in a single school the problem is one of available sets but conflicts are less likely.

The principal is also responsible for ordering and distributing supplementary guides, though in some schools teachers concerned collect money and submit orders for workbooks. In order to include the principals in the project, to give them an understanding of ITV, and expose them to a selection of telecasts, special one-day conferences have been held at the television center for principals. As in the case of the inspectors, the main (though hidden) purpose may be to win support or at least neutralize hostility by flattery and catering to them as a special elite group. The decision to introduce EVR clearly hinges on the evaluation of principals' capacity to administer and direct such a system and the ability to train them for the task.

c. Major curriculum changes. We have repeatedly alluded to the importance of ITV's association with educational reform, particularly with changes in curriculum. It has been suggested that, as a result of television, curriculum changes were carried out in two years which otherwise might have taken 20 or 30 years. Rather than having to wait for the dissemination of new theories and methods from the minds of the experts to the classroom, teachers and pupils using television had instant exposure to the new curriculum in its most refined and carefully worked out form. Even before they had entirely mastered the material, they could enjoy the "aid" of the studio teacher who had, while the inevitability of the next telecast pushed them to work harder, to be ready for it. This led several senior ITV officials to remark that, whether or not they (the Ministry of Education) realized it, any success the Reform might enjoy would be largely due to them. "We're saving the whole Reform for them; only they don't realize it."

On the other hand, teachers voice complaints that in the rush to introduce the new curriculum, children may suffer, at least in the short run. To the extent that telecasts cannot do the job alone and teachers have not yet mastered the material, pupils may come away with less rather than more learning as a result of the change. It remains the belief that even in such a situation TV programs insure at least a minimum of good teaching--more than was probably available earlier.

3. Changes in Teaching Techniques. Just as the inspector's role has been changed, so too the classroom teacher's task is substantially different as a result of television. No longer compelled to prepare lesson plans much less a syllabus, the teacher ought to be free to work on supplementary activities--on all the aids which seem so time consuming when considered as an additional responsibility. Thus far it would seem that teachers are kept busy learning the new material and rushing to keep up with the telecasts. There are, however, some signs that they are using more audio-visual aids, and spending their time in supplementing the course.

One of the common problems encountered in introducing ITV elsewhere is resistance on the part of teachers who feel threatened by the "intruder." But, apparently because of the success of steps taken to forestall such fears, direct observation and analyses of written reports suggest that resistance has been minimal. Teachers seem to appreciate the potential value of the programs--but not without hesitation. Several teachers complained that the telecasts took time away from them--leaving them too little time to teach basic things. One, in his first year of teaching, expressed all the predictable fears and hostilities: "What am I? A pillar? That's what I feel like--just standing there." In fact, he didn't just stand there--or sit; but continued a simultaneous translation of the English lesson virtually throughout the telecast. He explained afterwards that the class was especially weak and therefore needed his translation. Though claiming that the level was too high, he was ready to admit that there was some value in hearing natural English conversation and even confessed that, since teaching with television, he was able to understand English movies without reading the sub-titles.

This was an extreme example, perhaps. But most classroom teachers occasionally interrupt the telecast--to ask a question, focus attention, or even pre-empt the studio teacher's question. Several wrote on the blackboard. Even in cases of least resistance, the classroom teacher must accept a modification in his role and work out his own relationship with the studio teacher. It is interesting, and not insignificant, that the extremely hostile reaction described above came from a teacher who didn't participate in the entire training session ("I had to leave at noon, so my sister who had already gone through it helped me."), and who taught for the first three months without the use of teacher and pupil guides.

Teachers, in general, have apparently been convinced that ITV is only effective if they make it so and intimate that the lesson's value is virtually lost if they haven't time for a follow-up session. When this occurs, because of scheduling incompatibilities, they try to "save" the lesson at the next meeting of the class--but they may be too late. Whether the studio teacher is regarded as an expert, a guest lecturer of a sort, a helpful assistant, or an importor, is evident from the behavior of the classroom teacher and seemingly dependent on his own confidence and qualifications more than on the performance on the screen. The change, then, in the roles of classroom teachers, vary with his reaction--the extent to which he uses the telecast or is directed by it.

Instructional television is viewed in most situations as an elaborate teacher's aide which may (they will confess) allow one to be a better teacher--but which isn't a serious threat to their reign in the classroom.

Para-professionals are not being used to perform teacher functions.

C. Accomplishments of the Program

1. Extent to Which ITV is Meeting its Objectives. The initial objective justifying the introduction of ITV in Israel--to raise the level of achievement among disadvantaged children to the general average--is no longer a primary goal of the system. In spite of this, there is evidence of improved learning in culturally deprived neighborhoods where television has been used. A series for pre-school children (3-4 year olds) now in its trial period is the only remaining program specifically intended for underprivileged children to the extent that telecasts will be changed or re-made if such children fail to respond positively. In addition, a hint of the original objective is also evident in the decision to produce a series on drafting in order to reach the vocational school population, and in the decision to transmit fifth grade arithmetic series to seventh grades of lower levels with specially prepared teachers' guides.

ITV has not solved the problem of teacher shortages or large classes. This objective would seem to have been dropped as well, possibly because the shortage of eight years ago is no longer as acute and is increasingly one of qualifications and not numbers. Instead, the introduction of ITV has been coincident with a reduction in class size, according to the directives of the Education Reform and because of a lower rate of population growth.

As for the specific objectives relating to each subject area, it seems clear that ITV has led to improved learning achievement in all subjects used, and to improved teaching methods. In the absence of comparison studies with non-TV classes, the significance of the difference cannot yet be determined. Similarly there is no data on whether, for example, learning English through ITV has led to greater tolerance of foreigners or whether science telecasts have contributed to the development of a scientific attitude and appreciation of the methods of scientific research. Finally, professional objectives, primarily the goal to produce high quality telecasts using the best available techniques and personnel, cannot be examined at close range. Prizes have been awarded and letters of praise with requests for tapes received; but there remains a considerable amount of criticism from the scientific community in Israel as well as among the production staff themselves. Programs done two or three years ago are now considered terribly amateur and are being discarded as new series replace them.

Among the most important accomplishments, however, are those which were not stated as formal objectives of ITV. The level of teaching seems to have improved where ITV has been used, either directly through preparatory training courses or through the indirect effect of studio teacher and "model lessons" on classroom teachers. One teacher, who had been given a poor rating by the inspector, admitted that the major improvement noticed a year later by the same visiting inspector was due to what she had learned from the teaching methods of the studio English teacher. In addition, there are signs that the new medium is having an effect on teacher training in general, as teacher seminaries are beginning to include in their curricula consideration of the role of technology, including television, in education.

2. Evaluation of Instructional Television as a Teaching Medium. Since the evaluation unit is an integral part of ITV in Israel and potentially (as well as actually) plays an important part in the production of effective telecasts, we have included a detailed description of its methods and findings.

a. Techniques used in evaluation and results. The instructional TV center has a small evaluation unit of its own.[1]

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[1] During the pilot project the evaluation unit worked under the guidance of Prof. H.T. Himmelweit, Head of the Psychology Department L.S.E. London. During the last two years, Professor Louis Guttman, Director of the Institute of Applied Social Research, Jerusalem, has been a regular consultant to the unit. The unit also uses the services of the Institute for Data Processing.

The unit consists of three research workers assisted by a number of teachers who specialized in constructing achievement tests in each subject area. For special tests, such as I.Q. tests or oral comprehension, the unit uses teams of testers who administer the tests in the classrooms.

Research workers maintain close contact with the various production teams and the curriculum consultants. Together they clarify the objectives of each program and define the problems which should be investigated. The close association between research workers and production teams is a basic principle in the research. The latter are partners in research planning and in establishing research priorities.

The evaluation system is geared to provide rapid and immediate feedback, as well as to carry out more basic research on the relative effectiveness of different production approaches or the indirect effects of a given TV course.

Evaluation is obtained from all available sources of information--pupils, teachers, and observers. It concentrates on the total learning sequence, not only on the telecast although a special emphasis is always put on the effect of the latter.

Each phase of the inquiry is usually linked to the text, although the technique of evaluation at each phase varies. For example, the pre-test in the studio provides "special points of interest" which are validated later on, either by means of controlled experiments, or by means of observations in the classroom, teachers' evaluations and general achievement tests. Similarly, information obtained from the general test might stimulate further "post-tests" in the studio (similar to the pre-tests).

We list below the different approaches that are used (some are well-established; others, like the systematic observation in classrooms, were developed here) to evaluate the effectiveness of the teaching:

(1) Pre-tests

a. For each series, which is prepared a few months before broadcasting, a pre-test of a representative telecast is carried out in the studio building. The pre-test takes place during the initial stages of production, and its findings help in the making of the programs that follow.

Sometimes the pre-test led to a remake of the program tested. The pre-test is carried out on two or three groups of pupils similar to those for whom the telecast is intended. Information gathered from pre-tests provides an indication about the extent to which each learning objective in the telecast has been achieved, about the effectiveness of the production techniques used, as well as about pupils' reactions to the studio teacher and their general level of interest in the telecast.

b. An extension of the regular pre-test is the pilot experiment in the studio. When during the initial stages of production, there is uncertainty about the best method of presentation, an experiment is carried out (in the studio building) to determine which of two ways should be adopted for the series. To this end, a representative telecast is produced in two parallel versions. These are then seen by two matched groups of pupils, to whom tests are administered. The results are compared to determine the relative effectiveness of each version.

(2) Observations in the classrooms.

A study of television teaching of Spanish to pupils in Denver, Colorado, had shown that how much the children learned from the same telecast depended, in considerable measure, on the classroom teaching they received. During the first three years of broadcasting, classes were systematically observed and information was obtained about the way the teacher prepared the children for the telecast; the general reception of the program (level and variation in attention and interest; pupils' spontaneous comments and reactions during the telecast, the comments of the classroom teacher during the telecast), and details of the follow-up lesson which took place in the classroom immediately after the telecast.

A team of observers, all with teaching experience, were especially trained for systematic recording. The observers first viewed the telecast in the studio, became familiar with the scripts, the teachers' guide and, where applicable, pupils' worksheets. The production team drew their attention to presentation points about which they wanted particularly detailed information.

Every new telecast, when first transmitted to the schools, was observed in three classes. A report on the impressions gained from observers was given to production teams within two weeks of transmission.

In addition, each year, for a number of selected telecasts, observations were carried out in the classroom lessons which preceded and followed the telecast lesson. This procedure enabled us to obtain a more complete picture of the integration of some telecasts in the total teaching experience.

(3) Teachers' evaluations

Teachers are asked to evaluate the telecasts regularly. Specific questionnaires are designed to evaluate individual telecasts as well as entire series. The questionnaires encourage teachers to make suggestions for changes and to point out difficulties and unsatisfactory points.

(4) Achievement tests

a. After-telecast tests.

Sometimes the immediate learning from a telecast in the natural context of the classroom is of special interest. In such cases, tests are given to a small sample of classes immediately after watching the telecast. The information gained from these tests is complementary to the impressions gained by observation.

b. General achievement tests.

At the end of each series a general achievement test is given to the pupils. The basis for the test is the specification of what constitutes the successful understanding of teaching points or failure to understand them, as determined by the curriculum consultant and production team while production sequences are worked out. The questions included in the test are aimed to assess the acquisition of basic information, understanding of concepts, as well as the capacity to apply this knowledge to new situations. Some questions are related more directly to the material presented on telecasts, others are related to the classroom lessons between telecasts. However, the high level of integration in our instructional courses does not always make this differentiation possible. Here, references to impressions emerging from the observations and from classroom teachers proved helpful. Where it was not possible to isolate the different factors which influenced children's answers, a "post-test" of selected telecasts from the series was carried out on a sample of pupils who were invited to the studio to see the telecast but received no follow-up lesson. This made it possible to differentiate the effects of the telecast and of the test format from that of classroom teaching.

The procedure of the post-tests was similar to that of the pre-tests. (See above.)

(5) Controlled experiments in the schools.

Comparisons within TV classes:

Due to considerations of manpower and cost, only a few selected problems have been studied by means of presenting the same material in two different ways. Two parallel versions were transmitted to matched groups of classes, and tests were given to establish the relative effectivenss of each version.

Comparisons with non-TV classes:

Comparative studies between pupils taught by television and those taught by other means have been carried out only where they could reveal specific contributions of the TV production. Such comparisons are usually made when TV and non-TV classes are taught according to the same curriculum. Sometimes, they are based on before-after tests.

Results

1. Before-after comparisons of achievement between students using ITV and those not using ITV.

A carefully controlled experiment, carried out in 16 classes in connection with the English course for the ninth grade in 1968, showed that a single year of exposure to telecasts in English, improved significantly better the ability of the TV pupils to understand dialogues presented on English speaking films.

The TV pupils were exposed to 24 telecasts of average length of 16 minutes. Non-TV pupils studied English according to the same curriculum.

An additional vocabulary test which was given to both groups at the beginning and at the end of the year showed no significant difference in the progress of the two groups. In other words, the TV course made a positive contribution to the understanding of dialogues presented on films in the context of situations, but did not improve the general knowledge of vocabulary when presented in writing out of context.

Another controlled experiment was carried out in 20 classes in connection with the geometry course for the sixth grade in 1969. The purpose of the experiment was to evalute whether TV helped the development of special aptitudes amog pupils exposed to it.

The course consisted of 16 telecasts of 20 minutes each, which were integrated in 32 classroom lessons. BothTV and non-TV classes were given the same test once at the beginning of the year before they started to learn geometry and once at the end of the school year. While on the pre-test there was no difference between the average scores of the two groups, the post-test showed significant difference in favor of the TV pupils.

2. Other comparisons of achievement between students using ITV and those not using ITV.

A limited controlled experiment carried out in 1968 compared the oral ability in English of ninth grade pupils who learned with TV to that of pupils from the same schools who studied the same material with the same teacher but without TV. The experiment was based on individual matching (according to the teachers' grading). The tests were recorded tests, and each pupil was tested individually. The results showed significant difference in the scores in favor of the pupils who studied English with the aid of TV.

The TV presentation of a new mathematics series for the seventh grade, in 1968, enabled pupils from underprivileged backgrounds to reach the same level of achievement and understanding of basic principles as that of pupils with standard backgrounds who came from schools classified as "better schools" by the Ministry of Education, and who were taught by more qualified teachers. The total number of hours allocated to the course was slightly higher in the TV group. The time allocated to the actual watching of the telecasts should therefore be considered as "additional" for purposes of comparison.

3. Comparison of achievements between students who use different versions of the same telecast.

A limited controlled experiment carried out in 1969 in connection with a geometry series for the sixth grade showed no significant difference in the understanding of the main teaching points, between pupils who watched two versions of parallel telecasts. In one version the explanation used demonstrations of abstract geometrical forms first, followed only later by examples from the "real world," while in the other version the order was reversed: the explanations first used demonstrations of concrete examples followed only later by the abstract geometrical forms.

Another controlled experiment tested the relative effectiveness of a silent sequence of animated visuals in teaching the notion of an isosceles triangle for the ninth grade. The silent sequence of visuals proved to be as effective as the same sequence combined with verbal explanations.

4. The use of television for testing.

Two successful attempts were made by ITV in 1968 to use TV for testing the learning of elementary (first year, fifth grade) English.

The first test which took place after a single term of learning English enabled the evaluation unit to overcome the difficulty of testing a large number of pupils at a stage when they could not yet read or write. (The medium enabled the presentation of questions orally--in a standard form--on the basis of visual multiple choices.)

The second test took place at the end of the first year, at a stage when pupils had acquired minimum reading and writing skills. Using the medium for testing at this stage made it possible to present the material in the test in the same way in which it had been presented to the pupils during the course.

There are two limitations to the TV test: (a) the limited amount of material which could be tested in the 30 minutes available; (b) the tendency to limit the TV test to visual presentations (so that the medium is properly used) --not all understanding and learning lends itself to being tested in this way.

The use of two complementary tests, one presented by TV and one by conventional print, makes it possible to overcome the disadvantages and to benefit from the inherent advantages of each testing technique.

b. Attitudes toward evaluation. All senior ITV officials expressed generally favorable attitudes towards evaluation studies in principle and appreciation of the contribution of the evaluation unit. Some claimed to read all reports and to ask for further explanations when necessary for clarification. Others, however, expressed reservations if not complaints that tables were difficult to decipher and did not provide direct answers to their questions.

Obviously, evaluation is not only a matter of writing reports and having them read. Its effectiveness depends on cooperation from program and production staffs in planning tests and in implementing the results. Most evaluation studies have been done largely at the initiative of the evaluation unit and often with considerable resistance--not that production personnel oppose being studied but that "they are so busy, working under such pressure that they don't want to be bothered."

In order to measure the effectiveness of a telecast one has to have a definition of its objectives, but an attempt to have production teams provide such definitions routinely failed. The problem may be one of time pressure but it may also point to the difficulty of defining purposes precisely if not the absence of any regular attempt at doing so.

At the same time, one hears the complaint that for those questions to which practical and specific answers are required, research is either not possible or not conducted. These include matters of direction, style, sequence, and tone, all of which presumably could be tested through production of parallel versions pre-tested at the studio. But, while this has been done on occasion, it seems that practical as well as budgetary considerations, in addition to insufficient interest and cooperation, on the part of the production teams have prevented the practice from becoming the rule. Nevertheless, last year a large part of the budget set for evaluation went unused becaue of "unavailable manpower" in the building to produce the additonal versions requested by the research department.

Another potential source of conflict with the evaluation unit is the professional consultant--associated with a series or sub-series who may view the evaluation unit as a challenge to his supposed expertise. While this is clearly not true of all consultants--some of whom have been very cooperative with researchers, it has limited further the extent of research or its value in determining future programs. Those workers involved with biology and exact science have demanded evaluation while criticizing it for its imprecision; while until recently, members of the English production team showed no interest in it.

The central problem of evaluation is that of communicating results to the production staff and influencing their work. Reports on product tests seem to be specifically determined to pupil response to various aspects of the telecast--interest, understanding, as well as enjoyment--and would seem to be translated into directives to change or reamke the telecasts according to the results. But, in addition to the basic problem of insufficient awareness of the possibilities of such research as well as its limitations, a successful feedback mechanism requires either a commitment to accept its findings and respond to them or the authority to enforce such a response. A critical report may well be perceived as a threat to the team who finds it difficult to understand why a program should be re-made in its entirety because 20 of 27 children tested didn't "get the point." But this obviously is the key to successful ITV--and is recognized by members of the senior staff. "It is much more difficult than general TV because it's not enought to entertain, amuse, or otherwise hold their attention. We have to get a specific effect...if not, we've failed." But despite such views, and the organizational links between the evaluation unit and the programming staff, the feedback operation is operating under less than optimal conditions.

D. Other Assessments of the Success of the ITV Program

1. ITV Teaching vs. Traditional Educational Methods

Instructional TV is considered by most observers and participants to be better than traditional teaching methods. Telecasts are necessarily better lessons than even the best teacher can plan and execute when working alone. They have access to, at least potentially, the best technique, knowledge, and personnel. Even those who criticize the TV lessons on technical, pedogogical or professional-scientific grounds, admit that they are an improvement over the classroom teacher. Children are exposed to a greater range of phenomena, may be taken directly into the laboratory, the zoo, or the living room of an English family, and as a result are more motivated and interested in learning.

The fear that ITV's introduction would lead to a decline in the use of other audio-visual aids has not been realized, possibly because their use in Israel had been limited. Films, for example, have not been used extensively (outside of kibbutzim and a few "prestige" schools)--though they are available. The use of other classroom aids depended entirely on teacher equipment and experience and since teacher's seminaries have only begun to encourage such skills, the practice was hardly widespread. If anything, ITV seems to have led to an increase in the use of posters, charts, felt boards, as well as laboratories--by showing the teacher how and, in many cases, by providing the necessary materials. This is another way in which ITV potentially will lead to an improvement of traditional teaching methods.

One of the arguments against ITV is that it is not a substitute for the individualized teaching demanded by certain educational problems. But in an ITV system there ought to be more classroom time available for such purposes. As yet, the medium is too new and the curriculum too unfamiliar to allow for this effect. Furthermore, while those who rationalize the switch from special to general target audience claim that TV is not the best solution to the problem of education of the disadvantaged, they also recognize that the medium is apparently able to motivate and interest children who had not responded previously to classroom teachers.

2. Criteria for Evaluation

The main criteria used in judging the value of instructional television in addition to the results of formal studies, include classroom observation, discussion with teachers and children inside and outside the system, and extensive viewing of telecasts.

On the whole, the children like it. They complain to their parents and teachers if they don't have it in their school or at their grade level. One group of children organized itself to watch telecasts at home when they were repeated in the afternoon. Attention during the TV lesson is very high--the silence and concentration commanded by the little screen are rare phenomena in an Israeli classroom. Children worry that they'll miss the beginning, remind the teacher to turn on the set, and clap or sing along with the introductory music. They respond actively to the studio teacher whether or not they are asked--and the studio teachers become "stars." An observer mistaken for a studio teacher was the subject of stares, awe, and admiration. Teachers report that attendance seems to be greater on TV days--that children who have been sick may insist on coming to school because of the telecast.

We noted earlier that ITV was the first television system in Israel and enjoyed, therefore, the advantage of being a novelty. The effect on attendance may be an effect of television per se rather than a testimony to the interest in the programs themselves. Or it may be evidence that the TV lesson is considered too important to be missed. Now that general television operates daily and receivers are rapidly becoming widespread and commonplace as radios, the novelty will soon be gone. This is seen as being to the advantage of its value as an educational medium--as the excitement surrounding it fades and allows for concentration on the telecasts themselves.

Finally, Israeli ITV has received international recognition for its programs through competitions as well as through the numerous inquiries and requests for tapes from abroad.

3. Effectiveness for Whom?

From the above discussion the various viewpoints on the effectiveness of television as a teaching medium for different types of students should be clear. On the one hand, telecasts are constructed to appeal, at least minimally, to all groups--in terms of their achievement levels and cultural backgrounds. On the other hand, ITV is regarded as offering little to the very good students and now, given the new change in policy, of questionable though not negligible value for weak learners. But, were it feasible in terms of available broadcast hours, personnel, and financial considerations, to suit programs to the underprivileged, there is no doubt that the medium could show considerably more effectiveness. For bright children, however, it may only be able to serve as an enrichment medium as the formalism, necessary simplification and repetition become a source of boredom if not derision. And for children raised in an atmosphere of museums, lectures, archaeology, and concerts--even this function is of limited value.

There is no clear evidence as to whether ITV is particularly effective for different social groups but to the extent that these groups also suffer from poorer educational facilities and an environment less supportive of learning, the relative gain is potentially greater. The danger exists, however, that to the extent the medium seems to impose alien values it may interfere with the learning process. There is no sign of such a development here, perhaps because of the wariness of the TV production staff or perhaps because different values are not necessarily perceived as alien. To a great extent underprivileged children in Israel do not have common cultural values but do express a desire to resemble members of the dominant culture. On the other hand, introduction of more familiar references, characters or settings might contribute to an increased identification with the lessons and thereby encourage learning. Thus far the policy has been to avoid specific associations--but where such exist they are, almost without exception, to the dominant European background culture.

While this policy is understandable within the context of a system intended for the general Jewish population, the limited value of ITV for Arab children has been noted earlier. Here the problem is a more extreme one. Besides, the language problem is the factor of socio-cultural and, inevitably, political differences. The intrusion of Hebrew TV lessons into the Arab school room may eventually contribute to a more unified educational system, raise the level of Arab education, and broaden the basis common to Arab and Jew in Israel. But, this regular reminder of the state authority may be resented within one of the few areas which until now had been virtually entirely an Arab world.

This point should not be exaggerated. There is little if any attention to political issues and a great deal of care is taken to avoid any references to politics. Only in the totally voluntary enrichment series are such topics discussed at all, as in the special telecasts produced to commemorate Independence Day, the Holocaust, Memorial Day, or other historical events. Furthermore, there is no plan to use ITV as a means of direct political socialization. In fact, there is considerable aversion to the idea of politicized education.

In surveying Israel's instructional television system, one is struck by the extent to which it has remained relatively free from the problems which frequently plague new enterprises--namely, over-bureaucratization and politicization. To a great extent this seems a direct result of the financial history of the system--its origin as an experimental project supported by independent funds. Because ITV was given a chance to get established, without direct political pressure or effective control and with sufficient resources, its transfer to the Ministry of Education at the close of the pilot period did not diminish its autonomy nor affect its success.

CASE STUDY

THE NHK GAKUEN OF JAPAN

BY

JACK LYLE

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THE NHK GAKUEN OF JAPAN

I. INTRODUCTION

A. Nature and Purpose of the NHK Gakuen

The NHK Gakuen* is a special secondary program combining correspondence work with radio and television instruction. It is aimed primarily at young people who, for one reason or another, enter the job force prior to finishing their secondary education. However, enrollment is not limited to this segment of the population.

Organized in 1963 as an independent entity operating on a nation-wide basis, the NHK Gakuen is accredited by the Ministry of Education. It is only one of a large number of correspondence programs in Japan, which includes others aimed at the same population sub-group.

The NHK Gakuen was one of the programs included in the case studies of the International Institute for Educational Planning.[1] However, at the time of that study (1965-66) the program was still being developed and did not yet encompass the full upper secondary curriculum.

The present report is based on a study visit to Japan in August, 1969. By that time, NHK Gakuen had been operating its full curriculum for a period of three years and had graduated 5,348 students.

B. Brief Description

NHK Gakuen operates a four-year program with annual cycles corresponding to the regular Japanese school year (which begins in April and runs to the following March). It should be emphasized that NHK Gakuen is more than a name; there is an actual physical plant in Tokyo which serves as the administrative and operational center. In addition, there are 73 "cooperating" high schools throughout Japan.

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*NHK is the popular designation of Nippon Hoso Kyokai (Japanese Broadcasting Corporation), the giant non-commercial public corporation for broadcasting in Japan supported by fees on receiver sets. Gakuen signifies "high school."

[1] See Volume I of New Educational Media in Action. Paris: Unesco, 1967.

Students enroll and are advised personally at these locations. They pursue their studies individually, using correspondence texts and assignments which are supplemented by coordinated instructional broadcasts via both the radio and television facilities of NHK. In addition, students are required to attend at least 20 "schooling days" at the NHK Gakuen campus or a cooperating school. However, a number of students participate at their places of employment with the encouragement and partial subsidization of their employers.

Through this program the student can complete in four years the entire Ministry-established upper secondary curriculum (which requires three years in a regular full-time high school). Successful completion earns the student a diploma which entitles him to apply for university entrance examination.

C. The Effectiveness of NHK Gakuen

Consideration of the importance and effectiveness of NHK Gakuen must take cognizance of several factors related to the Japanese educational system and the present requirements of Japanese economy and society.

The Japanese traditionally have placed a high value on education. Further, the democratization of Japanese society following the end of World War II stimulated a dramatic expansion of secondary enrollment. As late as 1950 only about a third of the eligible age group was enrolled in full-time senior high schools; by 1968 this figure had grown to 70%.

The needs of a rapidly expanding and highly technical industrial base has helped create a shortage of trained manpower. This situation has given added impetus to the effort to enable the remaining proportion to complete secondary education either through part-time schools or correspondence programs. Related to this is a push for remedial education and re-training of adults in the labor force. Thus it must be recognized that NHK Gakuen is only one of a variety of efforts, both by government and by private and/or commercial agencies, aimed at the same general goal--extending educational opportunities and upgrading the labor force.

Effectiveness of the NHK Gakuen program can be assessed on two levels: (1) its accomplishments compared to similar programs and (2) its effectiveness as an instructional method per se. Fortunately, some evidence is available for both types of assessment.

With regard to the first, the completion rate for NHK Gakuen students is reported to be higher than that for other, non-broadcast coordinated correspondence programs covering the high school curriculum. However, there are caveats to be detailed later concerning this comparison, and it should be remembered that the completion rate of NHK Gakuen itself remains less than one out of every four who initially enroll. Student attrition is cited as one of the major problems of the program. Nevertheless, the fact remains that the program has been producing over 1,600 graduates per year and that 10% of these have passed qualifying examinations to go on to university work. The graduates and their accomplishments are concrete evidence that the program can work.

At the second level, a number of studies have been done by the school's staff in cooperation with NHK's large and expert research staff. These have focused on attitudinal and use factors of the program as well as experimental comparison of different instructional approaches. While these will be discussed in detail later, it should be stated here that the results support the general thesis that the broadcast input is important both for learning effectiveness and for helping to maintain motivation.

D. The Organizational Context of NHK Gakuen

It must be remembered that NHK Gakuen is an "independent" educational program, operating outside both the Ministry of Education and the NHK. However, since its relation to both is close, description of both is required to understand the program.

Broadcasting in Japan originally evolved into a monopoly public corporation, Nippon Hoso Kyokai. Before World War II NHK was an extension of the government, supported by a "use fee" collected from owners of receiving sets. As early as 1931 a second national radio network had been established solely for educational programs. These factors meant that NHK evolved a public-service orientation with great emphasis on education and culture which survived the re-organization after the war and the appearance of commercial competitors.

Prior to World War II, education in Japan was highly centralized and, while primary education was universal, secondary education and, even more so, university opportunities remained limited and elite in nature. Under the Occupation which followed the war, there was heavy emphasis on the democratization of education. This took the form both of increasing the proportion of students continuing their education beyond primary and of decentralizing the educational structure. Local boards of education were established; supervisory control of instruction and curriculum as well as finance was delegated to the prefectural level. Innovation was strongly encouraged at the classroom level.

At one point there was a great deal of such innovation. However, it has declined as a function of several factors. Authorities realized that many teachers were ill-equipped for this type of creative teaching and instruction sometimes suffered. Even the more talented teachers found the burden of such activity to be heavy when undertaken on an individual basis. According to authorities of the NIER (National Institute for Educational Research) in the post-Occupation period there has been a gradual retreat from decentralization. The Ministry has resumed final responsibility for school financing (monies are allocated to the prefectural boards for distribution to individual schools) and for setting curriculum. Thus, today there is a national curriculum pattern, although the prefectures do retain the right to make some modifications. However, it is reported that such modifications are decreasing. Further, new or experimental courses must now be approved by the Ministry with the result that the curriculum has become more academic and less flexible.

Significantly, the beginning of television broadcasting coincided with the period in which innovation was being actively encouraged. Further, at all levels it has been left to the individual teacher to decide whether or not to use television in her classes. From its inauguration, NHK's TV service provided programs intended for in-school use and by 1958 the first station of its second service began operation. The second service, devoted solely to educational programs, was providing nation-wide service by 1965.

However, while the educational network signal reaches 96% of the national's land area and a concerted effort by both educational authorities and the NHK has resulted in 90% of all schools being equipped with receivers, utilization of television remains spotty at the secondary level. (See Japan appendix.) Symptomatic of the situation is the fact that most often the school's set is to be found in the principal's office or the teachers' lounge.

An NHK report on utilization[2] states that although trust in content of instructional broadcasts was high, teacher evaluation of televised lessons was "rather negative in respect to their burden and their preparation of an appropriate curriculum when school broadcasts were used in class."[3] As might be expected, the report found that television lessons were more highly rated among those teachers. Many external factors were cited for non-use or suspended use, such as poor receiving equipment, teachers being in charge of subjects rather than classes, special attention necessary for students who wish to prepare for higher school entrance exams or special occupations, transfer of teachers. But the report also admits that while utilization of school broadcasts is influenced by surroundings and locality, "It may be most subject to the influence of the attitude and judgment of school teachers themselves who have a choice of school broadcasts."[4]*

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[2] Survey and Study of Educational Broadcasts (L960-1968). Tokyo: Japan Broadcasting Corporation (Radio and Television Culture Research Institute), 1969.

Thus, in the past 15 years, television has become a common factor in the educational experience of most Japanese students at some phase of their school life. This is coupled with a long and strong tradition of acceptance and expectation of educational content from the broadcast media on the part of the general population. This latter factor is further strengthened by the fact that since NHK's monopoly was broken in the post-war years by the establishment of commercially-supported radio and television stations, educational broadcasts have been included in the programming of many of these stations. (Indeed, some channels are classified as "educational stations" and are required by the government to devote large blocks of broadcast time to educational programs, although the definition of "educational programs" is sometimes vague. Included in these efforts are a number of extension type of program courses for out-of school and adult audiences. These stations are primarily dependent upon advertising revenues and are allowed to obtain commercial sponsors for educational programs.)

The growing needs of industry for more highly educated employees and the manpower shortage have given impetus to a wide variety of educational and training programs. Correspondence education was recognized by the Ministry of Education as early as 1948 as a means of equalizing educational opportunity both at the secondary and university levels. By 1955 it was possible for students to finish the high school course by correspondence and receive a diploma.

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[3] Ibid. p. 8.

[4] Ibid. pp. 6-7.

*It is interesting to note that higher use of radio than television is made at the secondary level; no hypotheses are offered to explain this. It should also be noted that the study reported increased use of VTR, particularly among regular senior high schools, of which 22% are reported to have installed such equipment. The personnel of NHK's Education Program Department repeatedly stressed this development, stating VTR was used for micro-teaching as well as to permit more flexible scheduling of broadcast input.

Correspondence programs had spread to all the prefectures by 1966 with 73 officially recognized secondary correspondence schools with 460 others designated as cooperative schools. The vast majority of these were schools operating correspondence programs in addition to regular classroom instruction; only seven operated as correspondence schools only. The vast majority of the total were public schools.

An important point is that under the legislation which regularized secondary correspondence education, students were required to spend some time in actual classroom attendance. Thus these programs have never, in the strict sense of the word, been solely correspondence programs.

That these programs have become a significant element in Japanese secondary education is attested to by the growth of enrollment from 11,549 in 1949 to 136,299 in 1967.

In contrast to the United States, Japan's population is relatively homogenous in terms of racial origin, religion and language.* While there are several small minority groups, such as the aboriginal Ainu in Hokkaido, Chinese and Korean refugees, and the Eta, apparently no need has been perceived fro special educational broadcasts for them. Attention has been given to the special problems of the rural population, to women, and more recently to handicapped children, both retarded and deaf.

As stated earlier, education has traditionally been highly honored by the Japanese population, whose literacy level--both official and actual--is certainly one of the highest in the world. In the more elitist days of the prewar period, even primary teachers had relatively high status, particularly in the rural areas, while secondary and university faculties stood high in both income and status hierarchies. However, NIER sources indicated that teacher status generally has fallen in the post-war period, reflecting the rapid expansion of teaching staffs (which perhaps meant lower standards) and a concurrent decline in salaries compared to other professions.

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*NHK, incidentally, maintains a Broadcast Language Committee as part of a declared policy of encouraging correct use of both written and spoken Japanese. The organization is also engaged in research of effective use of the language in the broadcast media.

At present there are considerable strains evident in the Japanese educational system, most particularly at the university level. Some faculties of the two most prestigious universities--the Imperial Universities of Tokyo and Kyoto--have been closed for as long as two years by student strikes. Most universities, public and private, have suffered from disruptive violence and perhaps the majority have some faculties inoperative as of the fall term, 1969.*

The causes of the student strife are varied and complex, but the point which is relative to the present study is that these dislocations have begun to interfere with the normal flow of upper echelon recruits into Japanese industry and so are beginning to bring a reaction from that sector. Actually there is some evidence that there has been increasing dissatisfaction in industry in recent years with educational results of the universities, which to some degree, at least, seems to parallel one of the major student complaints: bad teaching couples with out-of-date curricula and syllabi. One manifestation of this is frequent discussion in educational, broadcasting and industrial circles about alternatives to the present university system, including increased emphasis on possibilities of university-level programs via tele-communications. NHK at present is broadcasting ten university-level TV series which are used by individual university correspondence programs.

In the post-war era, Japanese education has taken an organizational form similar to that of the United States of America. Education is presently compulsory through the ninth year at which time most students are 15 years of age. Despite the acceptance of the American concept of universal educational opportunity, the Japanese system remains somewhat imprisoned by the system of admission examinations which were notorious in the pre-war period and are still credited as the cause of an accelerated suicide rate among age groups facing these critical points.

This becomes severe at the upper secondary level or high school level (which is not free) where each school establishes its own entrance requirements. A student does not have a guarantee that he will be assigned to and admitted to the "neighborhood high school." If the student has university aspirations, he tries to qualify for one of the prestige high schools whose graduates generally perform better on university entrance examinations and thus qualify for the handful of prestige universities whose graduates, in turn, are practically assured careers in the better paying commercial and industrial firms.

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*The national Diet in August passed, under emotional circumstances, a highly controversial law with the intension of forcing universities to solve their problems or face dissolvement.

In the prestige hierarchy, correspondence school graduates stand at the bottom. Yet the dynamic state of Japanese industry, coupled with the stabilization of population, is creating a situation where opportunities are expanding for all and some cracks are beginning to appear in the foundation of the traditional university-industry relationship. Thus, despite the relatively low status of a correspondence school diploma, it still offers sufficient economic incentive to encourage large numbers of persons to attempt the course. And, indeed, many industries and businesses are directly encouraging non-diploma employees to complete their education by this means.

II. DESCRIPTION OF THE PROJECT

A. History of NHK Gakuen

As has been suggested by the previous section, the NHK Gakuen was actually the outgrowth of a much larger scale effort to extend upper secondary opportunities via correspondence work together with the long-established NHK tradition of providing educational service. The corporation expanded its educational programming to include special courses for correspondence students as early as 1951. It was felt that such radio and TV programs would be a valuable instructional aid for these students studying on their own; in particular it was hoped that they would combat the feeling of isolation and thereby work to maintain motivation. The high attrition rate of the general correspondence programs gave great importance to this goal.

There was another disadvantage of the regular correspondence programs. They were independently organized and administered on a local basis (though adhering to nationally set standards and curriculum). This posed difficulties for students who might move during the course of their studies, and in their search for employment they were likely to move.

Further, the autonomy of the correspondence schools made it difficult to guarantee coordination of broadcast input.

The NHK Gakuen was created to provide a program which would operate on a national basis and which would combine correspondence lessons, the Ministry-required schooling days and broadcast input in a coordinated fashion which it was hoped would provide more effective instruction and reduce student attrition.

NHK Gakuen was established in 1963, theoretically as an autonomous entity but with NHK itself providing the major impetus as well as financial means. Although it has its own board of directors, the school is heavily subsidized (90% of the total budget) by NHK which controls appointments to the board. Further, key administrative staff members came from NHK and continue to have strong ties to that organization.

Most important, the broadcast input is directly a product of NHK's Educational Program Department which has a separate Correspondence School Broadcast Division. NHK had been broadcasting lessons for correspondence students prior to the establishment of NHK Gakuen. The Correspondence School Broadcast Division works closely with the NHK Gakuen faculty but is independent of the school's administration. Transmission is achieved over NHK's "second service" in both AM radio and TV. The organization of these components and their inter-relation is shown in the appendix.

NHK Gakuen has an official capacity of 20,000 students. However, it has never reached that enrollment and for the last three years the total has been some 18,000. This perhaps reflects caution on the administration's part to prevent over-enrollment as much as anything. The present policy is to limit each new class to 6,500, although it might be noted that there has not been a class this large since 1964; the 1969 entering class totalled only 5,621. The record of enrollment and graduation is shown in the Japan appendix. According to the administrative staff of the NHK Gakuen, only some 150 applications are rejected each year in the preliminary review, most of them on the basis of physical handicaps and/or obvious incompetence.

Several significant points can be derived from the enrollment data. Attrition obviously remains a problem of immense proportions: of the class which began in 1963, 68% had dropped out before the fourth year. Of the 3,751 who were still enrolled at that point, only a little more than half graduated at the end of the year. It might be argued that the first class, the largest ever admitted, was atypical and it is true that subsequent classes have shown a lower drop-out rate. Of the class which entered in 1966, 51% were still enrolled for the fourth year. However, the graduation rate, of those who survived to the fourth year has so far remained constant at 54-56%.

It is perhaps significant that the completion rate for those who did not graduate "on time" but who do continue for extra years falls quite drastically. One might, therefore, question whether or not students who do not finish "on time" possibly are not competent to pursue their studies without more personal supervision and encouragement.

Problems

Attrition remains high, if not highest, on the list of problems. Attempts have been made to combat attrition through a counseling staff. However, this staff is small--only eight outside of Tokyo. This means that, for the most part, in cases where a student is not attending schooling days or sending in exercises (thus signalling that he may be a potential drop out) the counselor is able to contact him only by mail.

If counseling and encouragement are critical, one might speculate that students in Tokyo who attend at the better staffed NHK Gakuen campus or those who participate in factory groups would receive more personal attention and show more perseverance. The data does give some support to this thesis. For the class which began in 1965, Tokyo area students had the highest graduation rate, 25%, compared to other areas, which ran as low as 16%. And whereas only 19% of the individual students of that class graduated, 37% of the factory students succeeded.

Concern is expressed by the NHK Gakuen staff about another problem which they expect to grow worse each year. As stated earlier, the proportion of the appropriate age groups enrolled in regular high schools has grown and the trend is for continued growth. The NHK Gakuen teachers perceive a decline in the average level of ability of each new class. They stated that they expect the continued growth of regular school enrollments will decrease their recruitment pool and, further, that those remaining in the pool will be teenagers of lower abilities and motivation, both factors which will make correspondence work exceedingly difficult for them. It is possible that as the pool does diminish more attention will be turned to remedial and re-training education for older segments of the labor pool and for women.

One problem which has received much attention, and which appears to have been successfully solved, concerns texts. The Ministry has placed emphasis on maintaining standards in secondary education. Part of the effort to extend these standards to correspondence programs has been a requirement that they use standard high school texts. This has undoubtedly been a handicap for students of regular correspondence courses. The texts are written for classroom use and the publishers have not seen a rewarding enough market to put out special editions for correspondence students.

From the outset, the NHK Gakuen prepared companion volumes for each text, breaking the content into sections which parallel to the sequence of assigned correspondence exercises and broadcast lessons. Detailed explanation, such as the classroom teacher might normally provide, is given. The supplement for the second English course, for instance, runs 271 pages against the text's 110 pages. These supplemental texts are printed by an NHK subsidiary on a cost basis. In addition, the NHK Gakuen faculty prepares and duplicates for distribution additional student aids and exercises each year as well as instructions and aids for teachers at cooperating schools.

As in most instructional television programs, there are problems of scheduling. One such disadvantage is that although there is an apparent effort to establish specific time slots for each of the four grade levels in the nightly program schedule, the different number of courses per grade level necessitates some irregularities in what would otherwise be a consistent routine. The Sunday schedule, in particular, is mixed and this must introduce some difficulties in the student's television use habits.

The irregularity of students' work schedules and the competition for the television set among family members during the lesson broadcast hours, which are in prime time, are also acknowledged sources of scheduling difficulties. Because of the amount and variety of NHK's educational efforts, the correspondence programs receive only two of the TV network's normal 18 hour weekday schedule. Thus it is impossible to repeat more than a few of the television lessons. One reason for duplicating the content of radio and television input is to provide additional opportunity for students who miss a lesson on one medium to "make it up" through the other.

In some of the factories this problem has been solved by management installing VTR equipment and making tapes of the TV lessons so that, regardless of the student's work shift, he can have the program available.

B. Scope of the Program

The NHK Gakuen operates on a national basis through cooperating schools located on the four main islands of

Japan. According to NHK[5], the educational TV network of 787 transmitters provides coverage of 96% of Japan's land area; the 141 stations of the educational radio network cover 99% of the area.

Although there is some participation in rural and mountain areas, the distribution of NHK Gakuen enrollment generally reflects the national pattern. Hence urban areas, particularly Tokyo, contribute the greatest numbers of students.

Curriculum

The program developed in orderly phases over a four-year period with curriculum being expanded each year as the first class progressed through the Ministry-required four-year curriculum. Thus it was not until April, 1966 that the full 25-course curriculum was being offered and the first graduates completed their requirements in 1967.

The curriculum and the schedule of coordinated broadcasts are shown in the Japan appendix.

Since achieving its full four-year operation in 1966-67, the broadcast schedule has remained basically the same. The time period for scheduling correspondence broadcasts was established on the basis of a survey of students as to the most convenient hours. For television this was found to be in prime time, from 9 to 11 p.m.

Generally, there is one broadcast lesson per week for each course, although for some, particularly the elective courses, only two lessons per month are broadcast. Fluctuations in the schedule from time to term reflect what electives are being offered in that period. The few repeat television broadcasts are concentrated on two of the most difficult subjects, mathematics and English.

Students in each grade normally should watch one half-hour television lesson on most week nights, although there is usually one night during the week when they may be expected to watch two. The Sunday schedule is prorated among the classes in similar fashion. (The situation on radio is similar except that more repeats are made.)

Academic Routine and Operation

NHK Gakuen has its own plant consisting of a three-story office and classroom building, a two-story dormitory, gymnasium and athletic fields, located in a suburb on the western fringes of Tokyo. A main commuter line is available from central Tokyo and there is bus service from the train station to the school. Outside of Tokyo, students use the facilities of the 73 cooperating schools, one of which is within relatively easy travelling distance of any part of the four main Japanese islands.

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[5] See page 12 of This Is NHK, Tokyo: Japan Broadcasting Corporation (Public Relations Bureau), 1969.

Students apply for enrollment prior to the opening of the regular school year in April and are assigned to the NHK Gakuen campus or their local cooperating school. There they are counseled and a scheduling of schooling day attendance is worked out.

By law all correspondence students must attend a specified number of actual classes each year. The NHK Gakuen students benefit from a reduction in this requirement in recognition of their use of the broadcast input; the normal requirement for these students is 20 schooling days per year.

The students come to the NHK Gakuen campus or their cooperating school about one day per month and in addition attend two school camps annually, each lasting five days and four nights. These camps are held at eight locations over the nation on a staggered basis during normal school vacations so that faculty from the Tokyo campus can participate as well as the teachers from cooperating schools. The camp periods are used for intensive classroom work and counseling, relieved by sports and other recreational/cultural activities. During the remainder of the year, counseling for students outside Tokyo is performed by the regional counselor, usually a retired teacher/counselor.

A unique feature of the NHK Gakuen is that, unlike most correspondence programs, students not only must attend the schooling days on a regular basis but are required to submit their written correspondence exercises on an established schedule rather than at their own pace. It is the stated policy of the school that "even in correspondence course broadcasts, it would be effective to make people learn at a given time and at a given speed."[6]

Students are issued packets of exercises for each course at the beginning of each of the two terms which constitute the school year. Each tells the students the schedule of coordinated broadcasts and text readings and specifies the date the assignment should be submitted.

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[6] *NHK Correspondence Education Broadcast*. Tokyo: NHK Correspondence School Broadcast Division (undated), p. 4.

All assignments are mailed directly to NHK Gakuen in Tokyo where they are corrected, noted on the student's records and then returned.

Another aspect of curriculum stringency is that students are required to enroll, not for individual courses, but as first, second, third or fourth year students, taking the full complement of courses required for that level. If a student fails more than three of these, he is not advanced to the next level at the end of the year. If he fails three courses or less, he is advanced but is expected to repeat the failed course(s) in addition to the normal curriculum for the next level. The failure rate declines markedly with each year, a fact undoubtedly related to the attrition curves which are sharpest for the first two years.

Students in Tokyo have the advantage of a much more flexible schedule of available schooling days: every Sunday, first and third Saturdays and the third Monday and Tuesday of each month. At the cooperating schools, the sessions are held only twice a month on Sundays.

Another advantage of the Tokyo students is that the large faculty available at the NHK Gakuen campus makes it possible to organize two tracks for fast and slow students in each subject. This is not possible in the cooperating schools.

There are also students who enroll as part of factory class groups encouraged by management. In these cases the schooling days are held on the factory premises with teachers sent out from NHK Gakuen campus. Management pays for the expense of this convenience; however, the students pay their own tuition and buy their own supplies. Management also provides a location where students may view the television broadcasts and, as noted earlier, frequently provides VTR facilities to make repeated and more convenient viewing possible. Factory groups constitute about one-sixth of the total enrollment.

Examinations are given three times during the year plus an end-of-term final examination. These are composed by the NHK Gakuen faculty and are graded at the Tokyo campus.

Utilization

Earlier it was stated that the attrition rate constitutes one of the greatest problems of the NHK Gakuen (along with other correspondence programs). Another very serious problem is utilization, as might be assumed from the scheduling problems. The two problems have been found to be interrelated.

Over the years it has been acknowledged that many students are not actually using the media lessons regularly or in some cases not at all.* A study in 1967 focused on this particular problem and also provided comparison between NHK Gakuen and other correspondence program students on certain aspects.

The results of this survey[7] regarding media use were as follows:

For course presently taken, use broadcast:

	NHK Gakuen	Others
for almost all	57.2%	5.2%
for about half	17.0	12.6
for "a part"	1.1	30.0
for none	11.6	49.0
no answer	5.2	3.3

Six out of ten of the NHK Gakuen non-users, it was noted, were students who say that they have "temporarily discontinued" their studies.

In an effort to combat this "broadcast truancy," students are now required to check on their assignment sheets which broadcast lessons they have used and to give a brief summary of the content. While this does not guarantee that they have actually seen or heard the lesson, it does probably create more motivation for the student to tune in.

Among both NHK Gakuen and the other students the most frequently used series are those in the courses they find most difficulty: mathematics, English and science. This finding suggests several implications that will be discussed later.

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*This creates an interesting situation, since these students receive a reduction in required school day attendance in recognition of their use of the media input. The staff contends, however, that the NHK Gakuen schooling days of seven hours are more intensive than those of other correspondence programs. This, they say, coupled with the school camps, means their students actually receive more direct schooling instead of less compared to students of other correspondence courses.

[7] This study, entitled "Results of Survey on Study Conditions of HIgh School Correspondence Students," is available only in a multilith report in Japanese.

Broadcast use was generally found to be higher among older students and among housewives.

Among the NHK Gakuen students, use of the broadcasts is strongly related to the student's credit standing: the higher his standing, the more likely it is that the student is a regular user. Further, the broadcast lessons are a highly appreciated factor for maintaining enthusiasm and interest. Students stated that the broadcasts help them understand course content and to form their method of study. The students who regularly make use of the broadcasts show a systematic attitude toward their studies generally. In these matters, the data is not sufficient to establish direction of causality and it seems likely that there is a strong interaction. But the point remains that the broadcast input does seem to provide important additional assistance and motivation for the more determined students and may be an important factor in maintaining the commitment of marginal students.

One disturbing finding of this study was that only 55% of the NHK Gakuen students (compared to 63% of other students) do preparation and review work for their lessons, and of these, two-thirds do only the review work.

This same study also revealed perhaps even more serious problems for all high school correspondence programs: 23% of the students reported irregular attendance of schooling days. No breakdown was provided on frequency for comparison of the two groups; however, the report states that "there are a few more NHK Gakuen students than regular students who do attend regularly." The study further states that the amount of attendance of schooling "directly determines study progress" "_particularly among NHK Gakuen students_" (emphasis supplied).

Another disturbing finding is that NHK Gakuen students report less interaction with teachers during schooling days than do students of other correspondence programs. The NHK Gakuen students state that they "do not feel like talking with teachers" or that they find the teachers difficult to approach and the ties of intimacy between teacher and student are thin.*

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*It would be interesting to establish to what extent this might be due to a "split loyalty" between the television teacher and the classroom teacher. Another possible explanation might be a low level of real interest on the part of teachers in the cooperating schools in the correspondence students. Unfortunately, no breakdown is available on this between students who attend the NHK Gakuen in Tokyo--where more interest would be expected--and those in the hinterlands.

The final statement of the study is significant, particularly when related to the general findings of the I.I.E.P. case studies.

> Whether or not there is a personal relationship between students and their teachers or friends makes a big difference in the progress of the students. Those students who are shunned or are isolated from communication with members of their study groups are in great danger of not progressing in or dropping out of their classes.

Earlier the report states that many students say the best encouragement is meeting friends and teachers at the schooling day sessions. Interestingly, this feeling is said to be stronger among regular students than among NHK Gakuen students. Further, among those who are irregular in their attendance, encouragement is reported from school reports and bulletins as well as letters from teachers and friends.

The difficulties of working alone are underlined by the fact that 28% of the NHK Gakuen students and 17% of the regular students are reported to have joined "study groups." Among the NHK Gakuen students, in particular the report states, combined study is a very important function. This is probably related to another finding: NHK Gakuen students have a strong tendency (stronger than for others) to seek help from their daily associates; students with other correspondence programs are more likely to wait and obtain the help from the teacher at schooling day sessions and those whose attendance is irregular are apt to leave their problems unsolved.*

Student Characteristics

Analysis of the 1968 enrollment showed that 51% were teenagers, 38% in their twenties, 10% in their thirties leaving only 1% in older age groups (which ran all the way up to the 70's). The largest single occupation group, is factory workers who constitute one-third of the enrollment, 21% are clerical employees. Only 2.2% were unemployed and 3.5% housewives. Rural workers--farmers, fishers and foresters comprised some 5%. About 1/18th move each year.

Returning to the results of the student survey discussed above, it has been found that 60% of all correspondence students live with their families, 20-25% in company dormitories or other facilities at their place of employment.

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*This finding is undoubtedly in some way related to the reticence of NHK Gakuen students to talk to schooling day teachers, cited earlier.

Answers to a question concerning motivation were somewhat stereotyped: 41% said to become "well educated," 35% to obtain the high school diploma, 11% for occupation-related reasons. In these responses there was no difference between NHK Gakuen and other correspondence students, but it was noted that among both groups males were more likely than females to mention occupational reasons.

The typical working schedule of students is between eight and nine hours, although 15% work over 10 hours a day and the average overtime per month is about 10 hours (with great individual variation). Students report that their study progress is "slightly affected" by overtime work but they do not think the length of their normal work shift or type of work affects it to any great extent. Schooling attendance is also said to be not directly affected by type of work nor the work schedule. Utilization of broadcasts, on the other hand, is reportedly affected to "a certain extent" by the schedule (not the length) of the work shift. This underlines the importance of the factory VTR units.

This study also showed that the NHK Gakuen students on the average pursue their studies 4-5 days a week compared to 3-5 days per week for other correspondence students, another indicator of a higher level of motivation.

C. Costs of the Program

Due to the complexity of the organizational structure and physical plants involved, no new attempt has been made to do a detailed cost analysis here. According to the administrators of the NHK Educational Broadcast Department the general analysis in the I.I.E.P. study is still valid with the notation that the per student cost has risen an estimated 10% in the interim.

The NHK Gakuen authorities state that the school itself receives an annual subsidy of Y300 million (approximately $830,000). As this is said to constitute 90% of the operating budget, the total should be just under $1 million. The remainder comes from student fees.

Student costs as outlined in school brochures are:

Registration fee (one time only)	Y 200
Annual tuition	1,000
Postal fees	200
Seminary fee	300
Club fees	150

($1 equals Y360)

Texts and reference books must also be bought by the student with the total expenses for the four-year program, including books, estimated at Y20,000 (approximately $56). This is half the estimated average cost of regular high school students.

The budget for the NHK Correspondence Program Division was reported by the staff to be Y200 million (approximately $555,000). However, this does not include the costs of transmission, studio technicians or amortization of office plant; all these items are carried in the general NHK operational budget.

Thus, with the exception of the approximately Y27 million generated by student fees annually, the costs are paid by NHK itself. (This Is NHK sets the organization's 1969 revenues as 83,750 million yen--over $230 million.)

Each course is provided a production budget which the producer-director draws on and which he must consider in planning special effects, additional talent, etc. The average allocation is Y100,000 ($260) per broadcast for direct expenses which include studio set and props, music, special performers or equipment, on-location filming, etc. No charge is made against this allocation for salaries, studio or transmission equipment.

The allocation may be higher for more complicated courses such as chemistry and home economics, less for simple content courses as Japanese language and classics.

III. TRANSMISSION

A. The Television Center and Transmission Network

The total facilities of NHK comprise possible the most complex television production-transmission system in the world. The educational TV network (which has color capability) consists of 787 transmitting stations and slaves to provide coverage of 16% of the nation's land area.

The educational radio network consists of 141 transmitters covering 98.5% of the area. NHK has production centers in major cities but all the correspondence programs are produced in the main production center in the Shibuya section of Tokyo. This facility, which opened in 1965, contains 20 television studios and 23 audio studios, including giant sound stages and concert halls. These all have direct service connections to the large central properties workshop and storage areas.

One wing of the 8-story complex is reserved for the Educational Broadcasting Section, incorporating eight television studios plus a complement of rehearsal halls for preliminary "read-throughs," make-up and dressing room facilities. Educational broadcasts are not restricted to these studios, nor are these necessarily used exclusively for educational programs.

Correspondence broadcasts, like all others, are assigned studio, special equipment and technical staff through a computer system which matches requests against the production center's total inventory and prior requests. Actually, most correspondence productions are routinely assigned to studios adjacent to the section's staff offices; only when special production requirements are required is it likely that they may be moved to other sections of the production center. For more complicated course series, such as natural sciences and homemaking, there are special studios with appropriate preparation facilities adjacent. These are the only correspondence broadcasts routinely done in color.

All studios have at least three cameras available. The standard technical crew for a program consists of 10 studio personnel: a technical director, video engineer, three cameramen, two audio mixers and three lighting engineers. In addition, there is a VTR operator and telecine facilities as required. This complement of personnel is assigned from the central pool.

In addition to these, there are normally four members of the Correspondence School Program Division involved plus the television teacher. These include the program director, a floor director and two studio managers.

A routine 30-minute program is scheduled for about three and a half hours of studio time. This includes 30 minutes for setting the studio, 70 minutes for technical orientation, 60 minutes for rehearsal time and 55 minutes for actual recording.

(For radio the routine is much simpler and the time shorter. Only an hour is alloted for a 20-minute program.

The teacher uses a small studio while the Correspondence School Program Division producer acts as engineer and director from the control room. Thus no technical staff is assigned from the central pool for radio.)

To simplify matters for the broadcast teacher, the usual routine is to record two programs on the same date. All programs are recorded, usually about a month before their broadcast date.

In summary, the producers of these programs have at their disposal the facilities of one of the largest and best equipped television production centers in the world. There is no problem as to availability of technical crews and the skill levels are high, the staff provided very ample. Although most broadcasts use very simple production, the producers have the advantage of knowing that if they need it, they can call upon the vast resources of the production center.

B. ITV Staff

As noted earlier, the organization is bifurcated. NHK directly provides all the staffing for broadcast input including the broadcast teacher while the NHK Gakuen is responsible for all other aspects of the program.

The NHK Gakuen has a staff of 96 full-time teachers backed by an administrative staff of 53 plus 251 part-time employees who help read and correct the 600,000 exercises generated each year. In addition, there are 1,752 teachers for schooling day classes at the cooperating schools; each school has one teacher for each course currently offered. Finally, there are the eight regional counselors.

The faculty at NHK Gakuen provides the main trust of both planning and operating and is organized in nine subject area departments:

	Full time	Part time help
Social Sciences	16	45
Japanese	15	58
Natural Sciences	15	45
Mathematics	14	28
English	14	42
Physical Education	10	16
Art	6	13
Home Economics	3	3
Business courses	3	1

The faculty members normally spend only 2-3 hours per week in the classroom directing schooling day instruction; the rest of their time is used for developing lessons and exercises and correcting papers. It is estimated that the teachers themselves read one-third of all assignments submitted, the remainder being read by the part-time employees. In addition, they participate in the school camps both in Tokyo and the eight regions. Only five are also broadcast teachers.

This faculty appears to comprise something of a teacher elite. Recruitment is done by advertising the opening and this draws many applicants. Competitive examinations are then held to provide a basis for final selection. Most of the faculty come from the Tokyo area which has the highest teacher pay scale in the nation and, as might be expected, is a magnet for the most qualified teachers. The NHK Gakuen pays its faculty salaries that are 10% above the Tokyo scale. The teachers are unionized and do have job security equivalent to that of teachers in the regular schools.

The original cadre in effect pioneered in the development of syllabi to combine the elements of correspondence and media instruction; there was no formal training. At present, new staff members are given on-the-job training by older staff members.

The part-time assistants are housewives and other residents of the large housing developments in the community around NHK Gakuen campus. Their education level is generally no higher than a high school diploma.

Schooling day teachers for the cooperating schools are recruited from the appropriate subject matter teachers of the local school. They receive Y1,000 ($2.50) per session which would mean only about $64 a year.

Regional counselors are employed on a full-time basis at a salary level somewhat less than the normal scale for teachers in their home area. However, since they are retired, this is an attractive source of additional income. Most were counselors prior to retirement. They are provided with attendance records on students in their areas so they can try to contact (usually by mail) marginal students. It is estimated that they personally see each student once or twice a year, during schooling days or visits to study groups.

Staffing for the broadcast input is the responsibility of NHK and, with the exception of the technical crews, is provided by the Correspondence School Program Division staff of approximately 80 producer-directors and supervisory personnel.

These producers are assigned to the section for periods of usually three years and, in effect, are part of the total NHK pool. They receive no special training or orientation for educational broadcasting, although many of them have personal backgrounds which include special experience in either teaching or specific subject matter areas.

Their careers follow the general NHK pattern of 3-4 year cycles. New employees are first assigned to local stations outside Tokyo where they receive on-the-job training. After three years they go to Tokyo to serve as assistants, during which time they are expected to continue their development. Next they go once more to local stations for a cycle as senior producers. Finally they return to Tokyo, first as middle producers, then senior producers. They may then advance to supervisorial posts. In these cycles they may alternate between general and educational assignments.

Although this is the pattern, there are many exceptions including persons who have served their entire careers in Tokyo and in the educational division.

This process guarantees a well-trained staff but not one necessarily grounded in and committed to educational programs.

The normal complement for each television production is a program director (either a senior or middle producer), a middle producer serving as floor director and two junior producers as studio managers. Each senior producer has a normal weekly work load of one 30-minute television production team work on a course-series through the year.

Broadcast teachers are selected by the Correspondence School Program Division, not the NHK Gakuen. They work primarily with the NHK producers; their contacts with the NHK Gakuen faculty are primarily at planning meetings and, for some, at camps.

There appears to be a heavy emphasis on university level persons as media teachers, although this is not universally the case. Subject matter expertise and ability to project on the media appear to be the major criteria, with prestige a desirable additional attribute. In most cases there are several teachers for each course during the year and the total number is 120. Generally a given teacher or team of teachers does 10-11 programs per year and only 30% do both radio and television. In some instances there are teaching teams. In English, for instance, two or more persons are generally involved for conversational purposes.

The pay scale for a 30-minute television presentation ranges from Y8,000 for a university professor down to Y5,000 for a high school teacher. Their contracts call for a 30% residual use payment. (However, there is little use of programs from one year to the next.)

According to the Division staff, NHK policy has traditionally avoided building a professional television faculty. This, they say, is based on the belief that most teachers become stale after five years on television. The average tenure is three years although at least one has continued for 16 years.

C. Software Development

Perhaps the most significant thing to note about the curriculum and materials is the emphasis placed by both the NHK Gakuen faculty and the Correspondence Program Section staff on the concept of team teaching. The "team" is defined as the various elements: texts and manuals, exercises and correction, media input and schooling day and camp activities. This is reflected in a high degree of integration of the effort, at least in Tokyo, despite the divided authority. The weakest link, in terms of coordination, is probably the school day teacher. More will be said later about this.

At present no new courses are being prepared, only revision and re-production of the standard curriculum program. At the time of development, preliminary planning for each course began two years before the scheduled date of implementation. First an outline was prepared by special planning committees. These committees consisted of NHK Gakuen teachers, consulting professors, subject matter specialists, representatives of the Ministry of Education, NHK educational officers and the Correspondence Program Section producers.

The detailed course outline was prepared a year in advance by the NHK Gakuen faculty. This was given to the NHK Correspondence School Program Division as a course syllabus. The NHK Gakuen teachers then proceeded with preparation of the details of correspondence instruction, exercises and materials for both students and schooling day teachers. These were ready for editing and printing six months prior to the opening of the term in which they were to be used.

Upon receiving the syllabus, the Division assigned it to a production team and the person(s) selected as television teacher. Conferences were held between NHK Gakuen faculty, television teachers and producers to decide which points should be developed in the broadcast input. The television teacher then prepares a rough script for each lesson. This was analyzed by the producer who made suggestions as to use of audio-visuals and who then began to plan actual production. A final script was produced cooperatively; the television teacher responsible for what he is going to say, but it is the producer deciding production matters and having final say. All media lessons are prerecorded about a month in advance.

There is an opportunity for total revision of all course components each year; only about 10% of the television lessons are repeated from one year to the next. In new production, the same general procedure outlined above is followed. All assignments and exercixes undergo at least review and some revision each year and are printed for all the current year only.

The reason for this practice is a philosophy that education and course content are dynamic. Further, the NHK Gakuen teachers state that in revising their part of the instruction, they are able to adjust for the trend they see toward decreasing competence with each year's entering class. (To allay normal suspicions, it should be stated that no union or teacher morale problems appear to be responsible for the decision to avoid repetition.)

Sensitivity to Students' Characteristics, Capabilities, Needs

From what has just been stated about the revision of courses, it is obvious that the NHK Gakuen faculty is alert to the special problems of their students. The division of students into two-track classes for schooling days is another manifestation of this awareness. The school days and camps generally are seen as necessary both for remedial, supervised classroom work and for the maintenance of morale and motivation. Every effort is made to make these accessible to the students, from providing as flexible a schedule as is possible within the program's budget to making available inexpensive meals and dormitories for those who need them.

The broadcast schedule has been set as a result of polling students to ascertain the optimum viewing time for the majority; VTR equipment adds more flexibility for those in the factory study groups.

Various surveys have shown that general mathematics is an area of particular weakness among the students who do not go on to regular high schools and is a major contribution to the failure of many who do. Therefore great emphasis has been put on the syllabus development for the math courses, particularly the first one. This is intended to be a remedial course to create an adequate base for progressing to the subsequent ones.

The importance and difficulty of English has also resulted in special attention to development of these courses.

As noted in the general discussion of education and broadcasting, minority groups and the problems which attend them do not constitute a significant factor in Japanese society. The relatively small scope of the NHK Gakuen precludes special attention to such groups. One might consider the NHK Gakuen as a special attention for a "minority group" of those who have not received full educational opportunity because of socio-economic pressures which, as a matter of fact, do parallel those which press upon American minority groups.

Development of Reenforcement Materials

In this program one might argue that it is the broadcast input which is the reenforcement material. The correspondence exercises required of the student must (and are designed to) carry more responsibility than merely reenforcing the other elements. These excercises were developed by observing the experience of other correspondence programs and by trial and error and formal experimentation. The latter has been used particularly in connection with the English and math courses and a considerable body of research data has been compiled as an outgrowth (unfortunately, the reports are available only in Japanese).

The concept of programmed instruction plays a major role in the development of the exercises and, indeed, for both math and English the exercises are almost totally "programmed." Again, experimentation has proven the effectiveness of this approach.*

D. Presentation Techniques for Television Lessons

Many of the presentations viewed consisted of little more than a straight lecture with a few visuals (mostly still pictures or drawings), sometimes with a written text superimposed. This latter technique appeared to present problems in that many of the written characters were indistinct against the background. (In response to a question concerning this, a producer agreed that this was so and stated that a device has been developed to emphasize character outlines but, unfortunately, it is not generally available yet for the educational programs.) Recognizing that there may be differences in cultural attitudes and tolerance levels, the observer still feels that many of the presentations would have difficulty retaining student interest for the 30-minute period.

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*A series of research reports have been issued on this work, but all are in Japanese. The pamphlet, NHK Correspondence Education Broadcasts cites selected findings, pp. 11-19.

Again, the concern for the difficulty of math, English and science is apparent in that the television lessons for these courses appear to be more elaborate and active than those for other courses. The math presentations made considerable use of what appeared to be very effective demonstrations of problem-solving. Some of these used nothing more than blackboard illustration by the teacher who, despite the language problem of the observer, seemed very good at combining this activity with his remarks to project a stimulating presence on the TV screen. Some used superimposed opaque projections of problem-solving sequences which appeared to be used in combination with the spoken message to present audio-visual programmed exercises. Again, this struck the observer as effective both in emphasizing points and keeping the presentation lively.

The English courses used many different techniques but relied heavily on vignettes acted out by the television teaching team to illustrate conversational usage. Specific points of grammar and pronunciation were frequently emphasized by superimposed text. In some cases points were first discussed in Japanese, then illustrated in English and finally expanded again in Japanese. Student involvement was sought by asking students to repeat phrases. In many of the English lessons, a "song break," illustrated with drawings and the text, was included. This concept seems rather effective from several standpoints; it provides a change of pace and can capitalize on the normal student interest in popular song while still keeping a focus on English instruction. Sometimes the text of the song was read to students as a dictation exercise.

Recalling that students report the most frequent use of these lessons, one wonders whether their relative popularity is due to the more stimulating presentation as well as to greater student appreciation of assistance in these more difficult subjects.

The plan for integration of the various elements of instruction is very good due to the great emphasis on the philosophy of team teaching. The weak link is the schooling day sessions at the cooperating schools for there is no means of insuring that the teacher at that point performs as intended. In the student survey, discussed earlier, some students complained about this element, requesting better coordination between the schooling day work and the other components.

The only point at which special consideration is given for differences in abilities among NHK Gakuen students is the use of two tracks at NHK Gakuen itself. One might assume that if there is sufficient range of abilities to merit this among the Tokyo students, it is also the case in other areas. Support of such a hypothesis also comes from a 1968 student survey* in which 49% of the students said the television presentations went "too fast," 20% said they were "too hard." (For radio, 43% said "too fast" and 39% "too hard.")

E. Links to Students

The procedures for maintaining contact with students and records of their progress have already been detailed. It should be noted, however, that in addition considerable effort is made to assess student and teacher reactions. Student surveys are conducted from time to time, usually using mail back questionnaires. Students and cooperating school teachers are encouraged to offer reactions, suggestions, criticisms during the camps at which time they are interacting with the NHK Gakuen faculty and, in some cases anyway, television teachers. Students are also ecnouraged to give such comments as well as to ask individual questions on their assignment forms.

Since most students do view on home sets, there is no effort aimed at reception technicalities. The high saturation of television in Japan coupled with the medium's immense popularity and ready availability of skilled repair service eliminate most problems at this stage. What problems might arise are more likely to be caused by conflict of schedules and competition among family members of program choice.

IV. ACCOMPLISHMENTS OF THE PROGRAM

The very fact that NHK Gakuen did produce a graduating class after four years of operation and continues to produce a graduating class each year is evidence of its success in achieving its objective. However, the fact that only about 20-25% of those who begin are successful in completing the program is evidence of the difficulties which limit the program's success.

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*This study is available only in Japanese and the author had only selected tables translated.

The effectiveness of the total instructional package is proven by the fact that the successful students pass examinations which meet the criterion of the Ministry of Education for a high school diploma. The success of individual components has been shown, for mathematics and English anyway, by experimental testing on samples of actual students. These experiments have shown that in both these course series, the programmmed instruction format exercises have produced significantly better results than more traditional types of correspondence assignments, particularly when used in coordination with the television lessons. The student survey quoted earlier has shown that the broadcasts do aid learning as well as the maintenance of motivation.

Although no testing of the role of schooling days has been reported, there obviously is strong feeling on the part of all connected with correspondence work in Japan that they are essential. This certainly is supported by the comments of students in the 1967 study. Equally obvious is that this is an area where more supervision and control should be exercised to assure that what happens in these classroom sessions is coordinated to the total effort.

Opinions About the Success of the Program

On the whole one judges that the NHK Gakuen program is considered a success. It is widely reported and publicized, not only by NHK, but by the Ministry of Education and other agencies as well. The Ministry is supporting similar efforts in other areas, including a technical high school program run by the Japan Science Foundation using facilities of commercial television stations.

Several pieces of informal and formal evidence suggest that at least some of these opinions are qualified. The fact that the program's enrollment has consistently been beneath capacity, coupled with the small rate of rejection, indicates that among the more than 120,000 persons taking correspondence work for a high school diploma, there has been no great rush to NHK Gakuen.*

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*This situation might be contrasted to the response which greeted a recent NHK course on computers, for which over 100,000 copies of the texts have been sold. This is a single course and the amount of commitment required obviously is less, but it does indicate the type of response which an educational program publicized and presented over television can generate.

Another reservation reflects on not only the NHK Gakuen television lessons, but all NHK educational programs. A senior member of the Educational Program Division wrote in a recent article.[8]

> I have to freely admit that not enough studies, either theoretically or pragmatically, have been made as to the correct placement of broadcasting in the overall framework of education. In order to better utilize broadcasting media as a part of the educational techniques, researchers, those in the broadcasting enterprise, students and instructors should get together and study the problem. (page 5)
>
> Broadcasting can be particularly effective when it comes to experiments, model demonstrations and actual performance. From this standpoint, I wonder if educational programs thus far have played only a supplementary role in correspondence education. (page 7, emphasis supplied)

It is certainly pertinent to point out that the author is one of the senior staff members who has had a long career concentrated in educational broadcasting.

This reintroduces the fact noted earlier that NHK policy intentionally works against the creation of professional television educators through the rotation of production staff and the turnover of media teachers. One cannot help but wonder what the impact would be if this policy had been other wise and there were more persons with concentrated experience in and dedication to instructional use of television. If that had been the case, it is certainly conceivable that the television lessons for NHK Gakuen students might more fully use the potential of the medium and the vast resources of NHK's Producation Center to achieve greater student interest and instructional effectiveness.

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[8] Takatsuka, S. Adult Correspondence Education in Japan and the Role of Broadcasting. Issued by NHK, undated.

CASE STUDY

RADIO IN NEW ZEALAND SCHOOLS

BY

PAUL KIMMEL

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RADIO IN NEW ZEALAND SCHOOLS

I. INTRODUCTION

The purpose of the New Zealand case study is to discuss the use of radio broadcasts in a centrally financed educational system. Special note is also made on the role of the Correspondence School. It provides an opportunity for students to receive an education even though they cannot attend regular schools.

Visits were made to Auckland, Wellington and Christ Church between April 23 and May 4, 1970. The trips corresponded with the end of the first term of the New Zealand school year.

II. THE NEW ZEALAND EDUCATIONAL SYSTEM

New Zealand has approximately 3,000 schools ranging from small one-teacher country schools to large city institutions with enrollments of up to 1,200 pupils. The Correspondence School has also been established to serve students who cannot attend regular classes due to physical handicaps or geographic isolation. Almost helf of New Zealand's schools have only three or fewer teachers. They vary in organization, some providing education for children from 5 to 13 years of age, others serving students from 5 to 10 years of age, 11 to 13 years of age, and 11 to 18 years of age.

Education is a function of the New Zealand national government. The Department of Education is headed by a cabinet level minister; he is served by a Director General responsible for day-to-day operation of the school system. The Director General is assisted by two subordinates: a Director of Primary Education and a Director of Secondary Education. They, in turn, supervise three district superintendents and three district senior inspectors. The inspectors are former teachers who periodically visit schools in their districts to evaluate the instructors' performance. Teacher promotions depend largely on these evaluations.

The organization and operation of the New Zealand school system is more formal and structured than that of the United States. Many children are segregated by sex in grammar schools, and most primary and intermediate students wear uniforms. All the schools must follow an integrated national syllabus, although individual institutions are free to organize their own approach to it. Consequently, the schools do not necessarily present the same materials at the same time during the academic year. Little provision is made for special groups of students who differ from the majority. The standardized course work seems adequate, however, as most of the student population is white, middle-class, English-speaking, Protestant, and of Northern European origin.

All schools must prepare students to take the School Certificate Examination at the end of the tenth year of education. Therefore, students in forms III and IV (equivalent to American ninth or tenth graders) must select the courses of study on which they wish to be tested, and most of the secondary school curricula is designed to prepare them for the examination. The certificate examination is administered by the Department of Education each November. To pass it, a student must score an average of 50% or better in English and three other subjects. Students who do not pass must take additional courses in their weak subjects to qualify for the next year's test.

A University Entrance Examination with requirements similar to those for the certification test is also given. Students wishing to attend college may be exempted from the university examination if they receive accreditation from a panel of educators. These boards are composed of the students' headmaster, teachers of their chosen subjects, and in some cases, an inspector.

The following figures indicate the percentages of students who passed the School Certificate and University Entrance Examinations from 1961 through 1968.

	Percent Passing School Certificate Examination	Percent Passing University Entrance Examination
1961	11.3	13.7
1962	11.5	13.8
1963	32.0	14.6
1964	31.2	16.6
1965	23.4	17.2
1966	22.0	18.1
1967	23.2	21.4
1968	24.7	20.8

A minority of the total school population eligible to sit for the School Certificate Examination actually take and pass it in any year, but most students who are successful can pass the University Entrance Examination and receive accreditation.

Today secondary school students can choose from a wider curricula than had been available in the past. One educator estimated that approximately 38 different tracks or types of course work could be followed by secondary students in Wellington. However, many subjects offered in large U.S. high schools are not available, and students have little opportunity to take part in extracurricular activities for credit during school hours.

School attendance is compulsory until age 15. All students are entitled to five years of free education beyond the fifth grade (or fourth standard). Students enrolled in private schools, or who leave public school before completing these five years, may re-enroll at any age and continue this free education.

Every effort is made to place children in a classroom. However, the correspondence school was established in 1922 to accommodate those who could not attend regular schools. Enrollment is limited to children under ten years of age who live two or more miles from a school or bus route, those over ten who live three or more miles from these facilities, and children in poor health or with physical handicaps. In 1969, approximately 1,800 full-time students were enrolled in the correspondence school; 1,200 were in primary education and 600 were in secondary. In addition, approximately 3,500 part-time students were enrolled. These were pupils over 15 years of age who could not attend evening classes at technical schools because of distance, ill health, or nature of their occupation.

Correspondence lessons are also used to supplement the limited curriculum of small high schools. These lessons are completed in the classroom under the general supervision of the teacher, but are sent to the correspondence school headquarters in Wellington to be corrected.

Students completing primary and secondary school work by correspondence may enroll in university correspondence courses. Only a few severely handicapped pupils have followed this procedure. Typically, children living in rural areas finish the primary grades by correspondence and, with a partial government subsidy, attend a hostel, private school or boarding school for secondary education.

The Director General of Education feels the role of the correspondence school is shifting. Fewer secondary students rely on it as New Zealand's communication and transportation systems improve. However, more adults desiring technical courses are receiving them from the correspondence school.

III. HISTORY OF EDUCATIONAL RADIO IN NEW ZEALAND

Educational radio broadcasts were initiated in New Zealand in the early 1930's at the request of teachers who saw the need for music programs. With the support of the Department of Education they requested and received air time for educational broadcasts from the New Zealand Broadcasting System (NZBS), a government department. Music and music appreciation programs were organized regionally by volunteers of practicing teachers. The NZBS did not participate in determining program content although it advised teachers on matters of presentation.

Shortly after the beginning of World War II, teachers and broadcasters began to realize that the quality of the school broadcast did not compare favorably with other NZBS programs. As a result, in 1942 the NZBS education division assumed responsibility for producing national education broadcasts; production of regional programs was discontinued. By coordinating its productions with the rest of NZBS, the educational division was able to employ the best writers, actors and musicians to produce quality programs. Broadcast authorities emphasized the value of good educational productions. They realized that students compared the school programs to other radio broadcasts, and that the programs were not limited to classroom audiences, but could be heard by anyone wishing to tune in.

The federal government took steps to insure coordination between NZBS and educators. It required NZBS to staff its educational division with former teachers. The government also created an advisory committee of broadcasters and educators to provide general guidelines for the educational division, to oversee its organization and to review the manner with which it discharged its duties. Broadcasts were restricted to those subjects in the national syllabus requiring augmentation (music, social studies, literature, and science), and were directed primarily to isolated country audiences with acute educational needs. From 1942 to 1948, most of the country's schools were equipped with radio receivers. The installation was financed by local and federal funds on a 50-50 matching basis.

Printed material to supplement the broadcasts was provided by NZBS, with the education department contributing a token sum toward the cost. By the early 1950's, NZBS lacked the financial resources to continue printing and distributing ancillary materials, and in 1952, the education authority assumed these functions. Preparation of the basic materials remained a responsibility of the broadcasting authority, however.

Until 1952 ancillary materials were designed only for use by students and were provided at no charge. When the education department began to share printing and distribution costs, the scope of these materials was expanded to include notes for teachers. Today, most broadcast supplements are designed to assist instructors. Attempts are currently being made to develop programs needing a minimum of ancillary materials, as they are costly and must be prepared far in advance to meet distribution deadlines.

In 1961, the broadcasting service was converted to a corporation. This change did not appreciably affect the educational broadcasts, however. Close cooperation continues between broadcasters and educators through the advisory committee. Educational broadcasting staff members still have access to specialists' advice on practical aspects of instruction and program content.

The content and style of school broadcasts are usually shaped by the interaction of three groups: (1) the Department of Education, which channels ideas through the advisory committee; (2) teachers themselves; and (3) the NZBS educational division, which obtains data through visits to and questionnaires from the schools throughout the country.

The 1970 broadcasting schedule continued to emphasize the four subject areas favored in the 1940's: music, social studies, literature and science. However, the orientation of the broadcasts has changed. The earlier stress on direct teaching has given way to in-depth discussions of topics covered by the classroom instructor. Thus, the radio programs complement the teachers' lessons instead of providing instruction in new subjects.

Experience shows that most teachers do not want radio to engage in direct teaching. The fate of the French programs for secondary schools, originated in 1940, illustrates this point. A special committee of educators originally organized these broadcasts, but classroom audiences were small. Evidence indicated that teachers used supplementary program booklets not as planning guides to prepare for the broadcasts, but as textbooks. The NZBS revised the programs and improved the quality, but audiences continued to diminish. A 1966 survey revealed that only about 200 students listened to these direct teaching broadcasts regularly. The lessons were withdrawn in 1967.

Currently, school broadcasts focus on those programs which the educational division of the New Zealand Broadcasting Corporation feels are best adapted to radio: musical instruction and appreciation, current events, professional drama, poetry readings, and documentaries.

Broadcasts are designed for a mass audience, although they are designated for certain levels within the schools.

The NZBC supervisor of the educational broadcasts feels the programs should be topical and contemporary. However, the necessity for advance preparation of ancillary material hinders the development of such broadcasts.

IV. SCOPE AND CONTENT OF EDUCATIONAL RADIO BROADCASTS

Radio receivers have been placed in virtually every primary and secondary school. Programs are broadcast from 1:20 to 2:00 p.m. each day from Wellington and are relayed over 13 stations throughout the north and south islands. Broadcast officials believe reception is usually good. If a school cannot receive a program at the time of broadcast, it can request a taped version from the National Audio-Visual Center in Wellington.

In addition to the regular school broadcasts, the New Zealand Broadcasting Corporation allocates 20 minutes of air time each school morning (from 9:25 to 9:45) to the correspondence school. These programs are broadcast over the national network, and anyone who has a radio may listen. In addition, a 20-minute program for pre-school children ("Listen With Mother") is presented daily. It is also used by 60% to 70% of the first year teachers as a transition from home to school. In 1970 the radio offerings are being expanded. A new series, "Liberal Studies," designed for eleventh grade students and "French Magazine" for seventh graders are being added to the schedule. (See the appendix for 1970 program listings.) Plans are being made to correlate the musical programs of all primary grades so children will learn to sing, play instruments, or otherwise participate in music as well as to appreciate it. A current affairs program and a news commentary are being developed to encourage sixth and seventh grade students to evaluate and to form independent judgments on contemporary issues. (See appendix for a listing of 1970 school broadcasts.)

Correspondence school broadcasts are designed to serve more of a social function than are regular school programs. As the correspondence school booklet indicates, "We use radio as a means of establishing and maintaining contact between the teachers and their pupils; the schools and the homes." Programs focus on younger children and feature speech training for primary pupils; physical education and music for infants and primary students; and music appreciation and language for secondary students. School assembly is presented every other week to announce school events and to recognize pupils' achievements in art, music and playwriting.

The scripts are written by teachers in the correspondence school headquarters in Wellington and are submitted to the NZBC educational division for approval at least two weeks prior to air time. They are broadcast by correspondence school teachers who have successfully passed an audition given by NZBC.*

V. UTILIZATION OF SCHOOL AND CORRESPONDENCE BROADCASTS

The NZBC periodically conducts surveys to determine the size of the educational broadcast audience. An assessment of the use of school programs (excluding correspondence programs) was made in the second academic term of 1969. Teachers in three school districts were asked to complete questionnaires; 463 primary and 67 intermediate schools returned information to NZBC. From these responses, NZBC projected the use of broadcasts throughout the entire school system. The radio corporation estimated that between 40% and 65% of New Zealand's primary and secondary students hear one or more educational programs at some time during the academic year. The NZBC also gathered data on the percentage of students who listened to particular programs. Results showed that a current affairs program was the most popular, while, language and science programs were used by a low percentage of the potential classroom audience.**

The decision to use a radio program to embellish classroom teaching or correspondence lessons ultimately rests with the instructor or parent-supervisor. Neither education nor NZBC officials pressure teachers to use them. However, the NZBC Supervisor of Educational Broadcasting is aware of the need to educate teachers in the use of the radio and the broadcasts. He promotes the programs through letters to teachers and students, visits to parent-teacher groups, and trips to schools undertaken with education inspectors. The eight NZBC educational program producers also visit at least 20 schools annually to assess the impact of programs on students and to encourage utilization of the broadcasts.

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*A more detailed description of the use of radio in the correspondence school in New Zealand appears in an article by that title prepared for the International Institute of Education Planning by John L. Ewing in 1967.

**The percentage of the potential audience that listened to particular programs is presented in the appendix.

The New Zealand teachers' colleges offer few courses relating to the use of school broadcasts; limited training is given in the courses on communication and use of audio-visual equipment. Because of this gap in teachers' education, the school broadcasting staff must be acquainted with the school curriculum and the teaching situation, must attend training courses and syllabus revision committee meetings, and must lecture to students in teachers' colleges on the use of radio in the classroom. Recently NZBC published a brochure explaining ways to utilize educational programs (see appendix). However, the individual instructor must decide if he wants to take advantage of this teaching aid.

The utilization of correspondence school broadcasts is even more difficult to assess than that of the regular school broadcasts. Here parent-supervisors and/or students themselves decide whether to listen. Parent-supervisors are occasionally advised by correspondence school broadcasters on ways to use correspondence lessons, but they do not receive tips about coordinating radio programs with these lessons. All full-time students receive a booklet at the beginning of the school year containing a complete timetable for NZBC educational broadcasts. Listening is voluntary, with one exception: students enrolled in language courses must participate in the language broadcasts to prepare for their examinations.

Resident teachers (correspondence teachers who live in one of the five correspondence school regions) are required to visit full-time correspondence students in their districts two or three times a year. On these trips they routinely ask if the broadcasts are being used, and the answers are forwarded to the correspondence school in Wellington. These reports tend to be fairly general and provide little guidance for changing, eliminating, or otherwise revising the radio offerings. No figures are available on the number of students listening to correspondence school broadcasts.

Based on observations of classes using the programs, the author concluded the quality of the learning experience depends greatly on the instructor. Teachers whose classes were involved in and benefited from the broadcasts had heard the program in advance, had formulated a specific plan for its use in the classroom, and had prepared the students for it.

The amount of course material which must be covered in the academic year and scheduling requirements limit the time teachers can spend screening broadcasts and fitting them into lesson plans. Since a program is presented only once during an academic year and is seldom re-cycled more than once every three school years, the easiest way to circumvent scheduling difficulties is by tape recording. Approximately two-thirds of the schools have tape recorders, but they are not always available to teachers.

The NZBC is prohibited by law from sending tapes of its broadcasts to schools and has resisted suggestions from education authorities that this policy be changed. The NZBC believes taped programs would lack the immediacy and vitality of live broadcasts, and technical advances would make older tapes sound dated and uninteresting. It does not have the equipment and staff to make and distribute the tapes and finally, the broadcasting corporation must protect the rights of its writers and artists. The National Audio-Visual Center faces similar problems with equipment and staff and has difficulty filling requests for tapes of school broadcasts.

VI. EFFECTIVENESS OF RADIO BROADCASTS

The NZBC, in collaboration with the inspectorate and curriculum specialists from the Department of Education undertakes studies to determine the value of educational broadcasts and the extent to which they are integrated with classroom work. Information is obtained through questionnaires, in-service teacher training exercises, school visits by the production staff, and surveys of members of teachers' organizations.

The educational supervisor of NZBC noted several attributes of the radio programs. In a report sent to students of teachers' colleges in 1969, he indicated that they have helped overcome the isolation of country schools, have provided specialized assistance to teachers requesting it, and have stimulated both teachers and pupils to indulge in further work. On the other hand, he pointed out the broadcasts are seldom if ever successful in direct teaching. They must be supplemented by other materials and by the active participation of the classroom teacher.

Teachers commented that the programs are most valuable if accompanied by appropriate teachers' notes and if enough preparation time is allowed. However, scheduling problems and a general lack of time have prevented many teachers from taking advantage of them. Most teachers agree that taping the programs alleviates many of these difficulties. As was mentioned, NZBC cannot mail tapes of its programs to schools. However, current copyright laws permit schools to tape programs to be used at their convenience.

Specific advantages of radio broadcasts mentioned by educators are: they can supplement a teacher's limited knowledge in particular subjects; provide a new voice in the classroom; and are useful for music, storytelling, and various physical activities which require professional standards of presentation the teacher may lack.

VII. EQUIPMENT MAINTENANCE

Because New Zealand's educational broadcasting began in the 1930's, most radio equipment in the school system is old and requires continual maintenance. The NZBC gives advice on radio care to schools accessible from one of its 14 stations. However, NZBC technicians have been called upon infrequently. Radio repairs are financed by the school system, not NZBC, and schools discover that funds are not easy to obtain from the Education Department. In some cases, local parent-teacher groups raised money for necessary repairs.

Another problem concerns the dual use of receiving equipment. In many schools receivers are used both as a two-way public address system from the headmaster's office to classrooms and as a radio. This usage impedes reception of broadcasts. A teacher whose class was observed by the author used her own transistor radio because the classroom receiver did not have the frequency range necessary to reproduce the broadcast faithfully.

VIII. FINANCING EDUCATIONAL BROADCASTS

School broadcasts produced by NZBC are financed by the Office of the Postmaster General, which is responsible for the country's entire communication system. The approximate budget of the NZBC educational division for a school year is $70,000. The supervisor feels this is adequate because he can use the general resources of NZBC to produce programs, and has no need to rent equipment and studio space or hire technical help. Major expenses include salaries for staff, writers and talent. Although no figures are available, the estimated cost of producing a single program is $100.

As mentioned earlier, the costs of printing and distributing ancillary materials are borne by the Education Department. When it assumed this obligation in 1952, printing and distribution costs were approximately one-third the costs of program production and broadcasting. The Education Department has difficulty obtaining sufficient funds for a high-quality job. The delays and procedures of working with the government printing office necessitate planning programs and schedules well in advance of broadcast, thus reducing flexibility. As a result, the correspondence school program bulletin lists only program titles, with no description of content, so changes in scripts and ideas can be made as the school year progresses. Program notes to supplement correspondence school broadcasts are not provided.

APPENDICES

APPENDIX TO
Educational Radio and Television in Australia

TABLE I

Typical Weekly Radio Educational Broadcasts

TABLE II

Typical Weekly Television Educational Broadcasts

TABLE III

Student Booklets Published by the ABC Education Department

TABLE I
TYPICAL WEEKLY RADIO EDUCATIONAL BROADCASTS

	Monday	Tuesday	Wednesday	Thursday	Friday
9:30 a.m.	Kindergarten of the Air	Kindergarten of the Air	Kindergarten of the Air	Kindergarten of the Air	Kindergarten of the Air
9:55 a.m.			The School Service		
11:00 a.m.	Corresp. School	Corresp. School Primary Grades III & IV	Corresp. School Infants	For the VIth Form	Your World of Music
11:20 a.m.	History for Secondary Schools	English for Forms IV & VI	English for Form V alternating w/ From the Library Shelf	Term I-German Form IV; Term II-Nat'l Project; Term III-German Form VI	Folk Dancing
11:45 a.m.	Health & Hygiene	Background to Today	The World We Live In	Tales of Many Lands	French for Schools
2:10 p.m.	Lets Join In	Listening Time	Lets Join In	The Music Box	Lets Join In
2:30 p.m.	Adventures in Music	Singing Together	Foreign Language Dictation	Books to Enjoy	Forms IV & VI
2:45 p.m.	Story Time		Health for the Juniors	Let's Have Music	Corresp. School French-Term I & II; French Lesson Term III

TABLE II

TYPICAL WEEKLY TELEVISION EDUCATIONAL BROADCASTS

	Monday	Tuesday	Wednesday	Thursday	Friday
9:30 a.m.	Social Studies Secondary	French 1st Year	Guten Tag	Encyc. Brit. Humanities	Current Affairs
10:00 a.m.		PLAY	SCHOOL		
10:30 a.m.	Science A	Art 1st Year	Geography 5th Year	Science & Life	Social Studies Secondary
11:00 a.m.	People of Many Lands	Discovering Science	For the Juniors	Current Affairs Affairs	This World of Ours
11:30 a.m.	Encyc. Brit. Humanities	French 2nd Year	Social Studies Secondary	The Art of the Film	Geography 5th Year
1:30 p.m.	Geography 5th Year	The Art of the Film	Science A	Nat'l Maths Form I	History: 1918-1965
2:00 p.m.	French 2nd Year	History: 1918-1965	Science & Life	Art 1st Year	Science A
2:30 p.m.	Science & Life	Science Primary	Making Music	People of Many Lands	All Join In
3:00 p.m.	Guten Tag	Nat'l Maths Form I	French 1st Year	History: 1918-1965	Encyc. Brit. Humanities
4:05 p.m.		PLAY	SCHOOL		

TABLE III

STUDENT BOOKLETS PUBLISHED BY ABC EDUCATION DEPARTMENT

LANGUAGES

Radio:

"French for Schools"
"Au Micro"
"Early Stages in French"
"Indonesian"
"Learning English" - 5 series for classes in Papua/New Guinea.

Television:

"La Chasse au Tresor"
"Notre Ville"
"Le Voyage du Jerico"
"Guten Tag"
"Mystère de Valbec"
"English by Television"

MUSIC

Radio:

"Music" - Songs and Melodies for 2 series.
"Instruments of the Orchestra"

Television:

"Making Music" - different series.
"We Play Recorders"

SOCIAL STUDIES

Radio:

"Health"
"An Australian Chronicle"
"Asian Neighbours"

Television:

"Know Your Australia"

INFANT PROGRAMS

"Let's Join In" - Illustrations and suggested activities.
"The Junior Listener"

APPENDIX TO
The NHK Gakuen of Japan

TABLE I

Ownership and Use of Radio and Television in Japanese Schools

TABLE II

Enrollment, Graduation Statistics, and Analysis of Graduates

FIGURE A

Organization Chart of NHK Educational Program Department

FIGURE B

Organization Chart for NHK Gakuen School

TABLE III

Curriculum of the NHK Gakuen Correspondence Senior High School

TABLE IV

Program Schedule of Senior High School Correspondence Course for 1968: Television Educational Network (Weekdays)

TABLE V

Program Schedule of Senior High School Correspondence Course for 1968: Television Educational Network (Sunday)

TABLE I

Ownership and Use of Radio and Television in Japanese Schools

Radio	Nursery School	Kinder-garten	Primary grades	Junior High School	Regular High School	Part-time High School
Own	77%	87%	98%	97%	97%	89%
Use	31	46	64	45	53	34
Television						
Own	95%	93%	99%	97%	94%	77%
Use	96	91	88	34	23	15

(From Survey and Study of Educational Broadcasts (1960-68). Tokyo: Japan Broadcasting Corporation (Radio and Television Culture Research Institute), 1969, page 5.)

Location of TV Set						
Regular classroom			15%	8%	3%	3%
Audio-visual room			23	7	12	8
Special classroom			26	26	16	15
			(64%)	(42%)	(30%)	(26%)
Library			35	22	11	10
Principal's office or teacher's lounge			39	59	78	71
Other place			13	11	18	17

(From DeVera, Jose Maria. Educational Television in Japan. Tokyo: Sophia University Press & Charles E. Tuttle, 1967, p. 69.)

TABLE II

Enrollment and Graduation Statistics

Number Students Enrolled

	1963	1964	1965	1966	1967	1968	1969
Total	11,721	12,091	13,915	17,005	17,868	18,626	18,156
Individual students	7,468	8,429	10,230	13,241	14,630	15,628	15,229
Factory students	4,253	3,662	3,685	3,764	3,238	2,998	2,927
Year Entered							
1963	11,721	5,418	4,065	3,751*	1,140	586	347
1964	–	6,673	4,080	3,153	2,678*	824	360
1965	–	–	5,779	4,774	3,102	2,463*	686
1966	–	–	–	5,327	4,760	3,063	2,722*
1967	–	–	–	–	6,188	5,528	3,827
1968	–	–	–	–	–	6,162	4,593
1969	–	–	–	–	–	–	5,621

*Normal graduation year, end of four-year cycle.

Analysis of Graduates

	Year Graduated			
	1966	1967	1968	Cumulative Graduates
Total	2,048	1,676	1,624	
Men	764	645	614	
Women	1,284	1,031	1,007	
Individual students	1,280	1,037	1,054	
Factory students	768	639	570	
Year Entered				
1963	2,048	239	64	2,348
% who entered	17.5%	2.0%	0.5%	20.0%
% surviving enrollment	54.6%	20.7%	10.9%	
1964	–	1,440	184	1,624
%who entered		21.6%	2.8%	24.4%
% surviving enrollment		53.8	22.3%	
1965	–	–	1,376	1,376
% who entered			23.8%	23.8%
% surviving enrollment			55.8%	

Data supplied by NHK Gakuen Administration.

FIGURE A

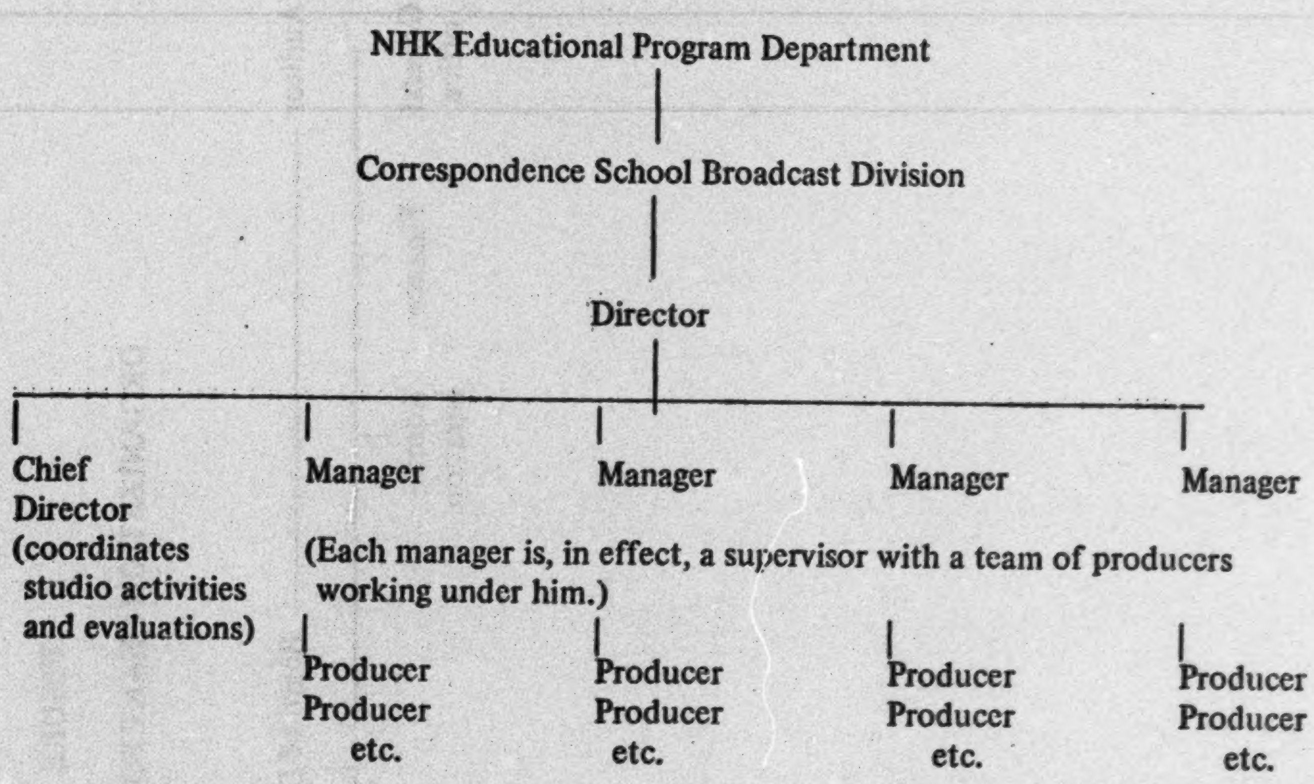
NHK Educational Program Department
Correspondence School Broadcast Division
Director
Chief Director (coordinates studio activities and evaluations)
Manager
Manager
Manager
Manager
(Each manager is, in effect, a supervisor with a team of producers working under him.)
Producer
Producer
etc.
Producer
Producer
etc.
Producer
Producer
etc.
Producer
Producer
etc.

FIGURE 8

ORGANIZATION CHART FOR NHK GAKUEN SCHOOL

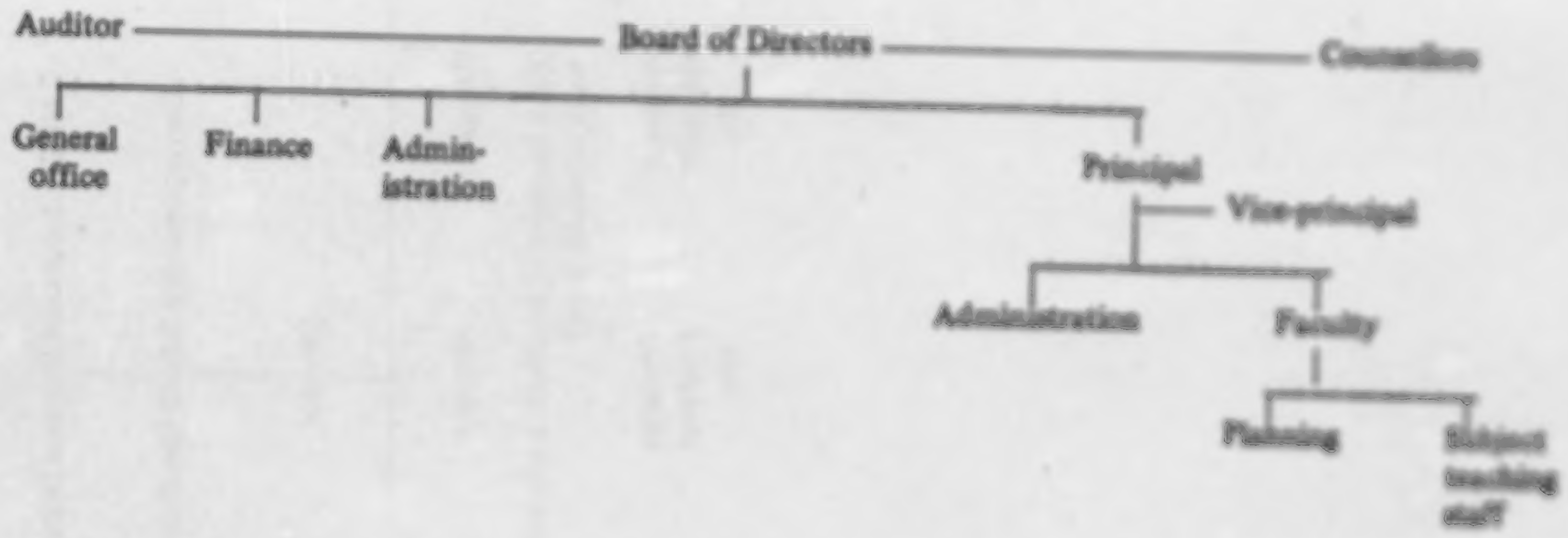
Auditor
Board of Directors
Counsellors
General office
Finance
Administration
Principal
Vice-principal
Administration
Faculty
Planning
Subject teaching staff

TABLE III

Curriculum of the NHK Gakuen Correspondence Senior High School

Subjects	Grades / Sub-Subjects	1st Yr.	2nd Yr.	3rd Yr.	4th Yr.	Total
Japanese	Modern Japanese	3	3		3	15
	Japanese Classics B		3	3		
Social Studies	Ethics-Civics				2	16
	Politics-Economics				3	
	Japanese History			3		
	World History B		4			
	Geography B	4				
Mathematics	Mathematics I	3	3			11~8
	Mathematics II-A			*5 (②)		
Science	Physics A				4	14
	Chemistry A			4		
	Biology	4				
	Earth Science		2			
Health & Physical Education	Physical Education	3	2	2	2	11
	Health			1	1	
Fine Arts	Music I		2			4
	Fine Arts I			[2]		
	Calligraphy I			[2]		
Foreign Languages	English A	3	*4	*2		11~3
Homemaking	Homemaking-General		④		*(4)	4~15
	Clothing I			③		
	Food I				④	
	Housekeeping			②		
Vocational Subjects	Farm Management				[4]	4
	Electricity General				[4]	
	Commercial Bookkeeping				[4]	
Total Number of Credits in Each Grade		20	23	24	19	86
Number of Subjects in Each Grade		5	8	8~9	7	28~29
Special Curricular Activities (class hours)		12	12	12	14	50

Note: 1. Figures in the chart show the number of credits.
2. [ ] ······ Electives in the same Subjects.
◎ ······ Electives for girls.
3. * ······ Subjects which are not required to be taken by girls if they take the electives marked with ◎.
4. Homemaking is only for girls and Vocational Subject is mainly for boys.

TABLE IV

PROGRAM SCHEDULE OF SENIOR HIGH SCHOOL CORRESPONDENCE COURSE FOR 1968
TELEVISION EDUCATIONAL NETWORK (WEEKDAYS)

Time Day	9:00-9:30 p.m.	9:30-10:00	10:00-10:30	10:30-11:00
Mon.	Modern Japanese (1)	Modern Japanese (2)	Classical Literature B I (Chinese Class.)	Physics A
Tues.	Mathematics I (part I)	Mathematics I (part II)	Classical Literature B I (Japanese Class.)	Mathematics II A
Wed.	English A (1)	English A (2)	English A (3)	Modern Japanese (3)
Thurs.	Chemistry A	*Biology *Earth Science	World History B	Mathematics II A
Fri.	Mathematics I (part I)	Mathematics I (part II)	Japanese History	*Ethics Civics *Political Science & Economics
Sat.	English A (1)	English A (2)	English A (3)	Mathematics II A

*Biweekly program

TABLE V

PROGRAM SCHEDULE OF SENIOR HIGH SCHOOL CORRESPONDENCE COURSE FOR 1968

TELEVISION EDUCATIONAL NETWORK (SUNDAY)

Time / Week	10:00-10:30 AM	10:30-11:00	11:00-11:30	11:30-12:00	1:30-2:00 PM	2:00-2:30
1st	Geography B	Earth Science	Chemistry A	General Homemaking	General Electricity	Calligraphy I
2nd	Geography B	Earth Science	Chemistry A	Clothing I	General Electricity	Music I
3rd	Geography B	Physics A	Biology	Physical Education	Book Keeping	Fine Arts I
4th	Geography B	Physics A	Biology	Health	Book Keeping	Special Curriculum
5th	Exercise for English and Mathematics					

APPENDIX TO
Radio in New Zealand Schools

TABLE I

Typical NZBC Radio Broadcasts to Schools

TABLE II

Listening Survey Results - NZBC Broadcasts to Intermediate Schools (Term II, 1969)

TABLE I

Typical NZBC Radio Broadcasts to Schools

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
9.04 a.m. LISTEN WITH MOTHER	9.04 a.m. LISTEN WITH MOTHER	9.04 a.m. LISTEN WITH MOTHER	9.04 a.m. LISTEN WITH MOTHER	9.04 a.m. LISTEN WITH MOTHER
9.25 a.m. CORRESPONDENCE SCHOOL SESSION	9.25 a.m. CORRESPONDENCE SCHOOL SESSION	9.25 a.m. CORRESPONDENCE SCHOOL SESSION	9.25 a.m. CORRESPONDENCE SCHOOL SESSION	9.25 a.m. CORRESPONDENCE SCHOOL SESSION
1.20 p.m. WORLD WE LIVE IN	9.45 a.m. LIBERAL STUDIES	1.20 p.m. TODAY	1.20 p.m. GREAT EXPLORERS	1.20 p.m. LIVING LANGUAGE
1.35 p.m. MUSIC BOX	1.20 p.m. EXPLORING NEW ZEALAND	1.30 p.m. STORIES FROM EUROPE	1.40 p.m. SENIOR SINGING LESSON	1.35 p.m. STORYTIME
1.50 p.m. LET'S WRITE ABOUT IT	1.40 p.m. LET'S MAKE MUSIC	1.45 p.m. MUSIC AND MOVEMENT		1.50 p.m. COMMENT

TABLE II

NZBC BROADCASTS TO SCHOOLS - LISTENING SURVEY
TERM II 1969
INTERMEDIATE SCHOOLS

Programs	Potential Audience		Actual Audience (Returns from 73 Schools)	Actual % of Potential Audience
	Schools	Pupils	Pupils	
Mondays				
THE WORLD WE LIVE IN - Current Affairs	95	52,000	14,246	28%
HEALTH AND HYGIENE	95	52,000	7,895	15%
Tuesdays				
EXPLORING NEW ZEALAND - Social Studies	95	52,000	6,591	13%
SENIOR SINGING LESSON	95	52,000	3,275	7%
Wednesdays				
TODAY - Current Affairs	95	52,000	4,482	9%
BOOKS BRING ADVENTURE - Literature	95	52,000	5,749	11%
Thursdays				
LISTEN AND WRITE - Language	95	52,000	2,877	6%
Fridays				
MAN AND HIS WORLD - Social Studies (Outside NZ)	95	52,000	5,008	10%
POWER AND WATER - Science	95	52,000	3,830	8%